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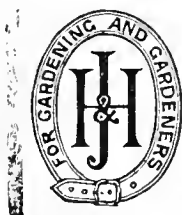
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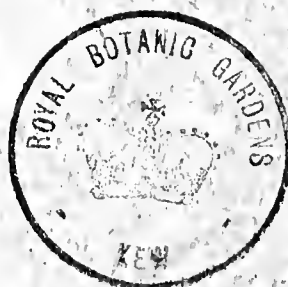
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NEW YEAR'S ADDRESS.

A MIDST the gloom which has settled over our country, recalling as it does the terrible days of the Crimean War and the Indian Mutiny, it is difficult perhaps to write on any subject which does not bear directly or indirectly on the war; but it behoves all good citizens to remember that they have duties of various kinds, which must be carried out, notwithstanding the adverse circumstances in which we are placed, and consequently I feel that the pleasant duty which I have for many years discharged of sending a word of greeting to the readers of the Journal must not be omitted.

Of course, as far as I am personally concerned, it must be a matter of deep satisfaction to me that my health and strength enable me to do this. To one who is far advanced in his eighty-second year it is not likely that the opening year of the twentieth century should be so full of glowing anticipation as it will be to so many; but withal, I do not desire to write in too melancholy a strain, and, indeed, as far as horticulture is concerned, this is not necessary.

On every side we see signs of progress; the number of persons interested in their gardens increase year by year, and although most quarters of the earth have been ransacked for that which affords one of its chief charms—the introduction of novelties—every now and then there crops up something that brings an additional pleasure to the cultivator. Then, for those "who sit at home at ease," there is garden literature enough to satisfy the most hungry searcher after new ideas. The course of events has run smoothly on. There are no fiery contests and fierce controversies which I can remember in years past, and those who wish that their last years should be spent peacefully will welcome all this, and be glad that they have no longer to brandish their blackthorn or shake their fist in the face of an opponent.

We naturally look to the condition and progress of the Royal Horticultural Society as the great central exponent of horticulture in the kingdom. Under its present able management it is always endeavouring to search out for some new departure,

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and the past year has witnessed another of its successful efforts. The holding of a Conference on Hybridisation to which foreign growers should be invited was a happy idea which met with general assent, and those who know the hospitality with which English horticulturists are received abroad, were glad that the intention to invite some well known hybridisers from the Continent and from America was carried out. Not only was the Congress held and valuable papers read and heard, but the foreign visitors were invited to share the hospitality both of the Royal Horticultural Society and of the Horticultural Club. These reunions were very pleasant, and were highly appreciated by those who were invited to share them. This was, of course an extraordinary work of the Society, but its routine operations were carried out with the same care and energy as before.

The Temple Show was, as usual, a magnificent spectacle, which no other country in the world could produce. We are sometimes asked why a more artistic display is not made at this show, and we are invited to copy some of the foreign exhibitions with their waterfalls, rivulets, and other pretty adjuncts. Well, simply this is not our way of doing things, and we prefer the plan of giving the plants the greatest liberty to show forth their charms. One thing, however, may be said, that it is a great pity there is no change from year to year of the formal arrangements that are made. One could with tolerable certainty determine in which part of the tents each collection would be found.

The early date on which the Temple Show is held, and the character of the exhibits, which are all produced under glass, render them independent of the weather, and therefore that important element of horticulture does not come into play, unless it be in the retarding or hurrying on of certain products. But the grower of plants out of doors has again had a very hard time to put up with; it was very nearly a repetition of 1898, we had the same periods of cold winds and long and very trying drought. These things have their effect on fruit and vegetables, especially Pears and Apples, from which, owing to the extent of their blossoming we were prepared to look for a good crop, but on the whole it was a very partial one, or, as we say in this county, "a very spotty one"—that is, in some places and on some trees a plenty, and in others none, while everything was turned topsy-turvy in the flower garden. Roses were very late, and many herbaceous plants which delight in moisture succumbed altogether. It is to be hoped our droughty seasons are drawing to a close. We have had a good cycle of them, and yet after all I think one would prefer them to such terrible seasons as 1879, when day after day rain fell and the corn rotted in the fields.

The year has not been remarkable for the introduction of any great novelty in flowers, and it must be in some out of the way corner whence such novelties should come, for all parts have been invaded by the zealous explorer, and yet now and then something does turn up. For instance that very beautiful Lily, *Lilium rubellum*, which has been imported in large quantities by Messrs. Wallace and Co. and others. At the Drill Hall meetings of the R.H.S. all novelties worth recording have been exhibited and decorated, and it is somewhat curious to see in what regular lines these novelties run. Among Orchids awards of merit have been given to twenty-five Cattleyas, sixteen *Lælio-Cattleyas*, and thirty-seven *Odontoglossums*. I wonder if any Orchid grower cultivates all these, which year by year are produced. We florists used to be jeered at for growing collections of flowers which we said were distinct, but in which the general public could see very little if any difference. What a multitude of *Cypripediums* have been raised within the last few years, and yet the raising of new ones goes on.

Beside Orchids more homely flowers have been raised and exhibited in large numbers, and awards of merit have been given to twenty Carnations, twenty-eight Chrysanthemums, twenty-nine Dahlias, most of these being of the Cactus type, which is considered now more suitable for decoration, while the old Show Dahlia has very much declined in public estimation. In two favourite flowers, the Narcissus and the Rose, not many new varieties have been produced; the rage

for the former flower has somewhat declined, and no wonder, for the production of varieties has been pushed to a ridiculous extent. The Rose holds its own, and will always do so I think, but of the large number raised on the continent (about sixty or seventy every year), very few find their way to our gardens.

I should be glad to know if there is any other pursuit which provides its lovers with such a wealth of literature as does horticulture. Week after week the serial productions demand the attention of its votaries, but whose appetite is so voracious as to be able to devour them all. In books we have had that delightful volume by Miss Jekyll, "Wood and Gardening," which ought to elevate the tastes of those who consult its pages; then there is also a very pleasant book, not strictly horticultural, but written by one who has taken a prominent position, and who has been for some years a member of the Council of the R.H.S., Mr. Henry J. Pearson, who graphically describes his journey in Nova Zembla, called "Beyond Petsora," although his researches are mostly ornithological; and here I may perhaps say without vanity that I have just passed through the press a new edition of a little book I published some years ago, "Roses for Amateurs," and I do not think it is often given to one in his eighty-second year to carry out a work of this kind.

Special societies have, I think, had a good time of it. The National Auricula has increased its numbers; the Carnation and Picotee Society, under the fostering care of Mr. Martin R. Smith, is in a flourishing condition; the Chrysanthemum Society also seems to be prospering, as also does the Dahlia Society, although it has to mourn the loss of its accomplished President; while the National Rose Society closes the year with a larger balance than it has ever had. I can say very little about the Royal Botanic Society, for I am ignorant of its proceedings, but I believe it goes on its usual way. The Crystal Palace under its new management seems likely to find favour, and unquestionably there is no place in or near London where horticultural shows can be held with such pleasure to all concerned.

And now we come to what is always the sorrowful part of my little address, the calling of the death roll, and few years are full of sadder memories than that which is now closing around us. First and foremost was the patriarch of horticulture—Mr. John Lee—who entered into rest ere yet the first month of the year was gone. How little one thought that when that accomplished French horticulturist, Mons. Henry de Vilmorin, was over with us at the Conference in July, he was to pass away so soon for ever from us. He was fond of our country and people; he was an accomplished gentleman who spoke our language with fluency, his diction was always happy and refined, his manners were genial and his conversation piquant. Many of our leading members, such as the late Dr. Hogg and Mr. Harry J. Veitch, were his intimate friends, and he has left a blank which it will be impossible to fill.

Then there was my dear old friend Frank Rivers, who carried on at Sawbridgeworth the work begun years ago by his esteemed father. Between them they enriched our gardens and orchards with many valuable productions in flowers and fruits; Mr. Rivers' father was at one time a most successful grower of Roses, but his son did not take so much to them as to fruit, to which he was devoted; how genial and pleasant he was, and what a fund of anecdote and general information he had. I used to enjoy very much my chats with him at the Horticultural Club, and one of my first questions to him used to be, "Well, Rivers, what new books?" and I was always sure to get a list of some worth reading; his last illness was protracted and painful, causing great regret to his friends.

Dr. S. P. Budd of Bath was also a great loss to horticulture; of course from the distance we were from one another I saw little of him, but he was for many years a successful competitor at the exhibitions of the National Rose Society, and was twice the holder of its challenge trophies.

Another of this Society's most distinguished members passed away in the person of Mr. T. W. Girdlestone. He was well known to many of the readers of the Journal, and had done much, both by his writings and energy, to forward the culture of the flowers in which

he was specially interested—namely, the Rose and the Dahlia. He was a constant and successful exhibitor of the former for many years, but latterly his exertions had been confined to the Dahlia, more especially to the single varieties. He had initiated a race of dwarf plants, and the manner in which he used to exhibit these evidenced great taste. He was a sharp critic and keen observer; for many years he had compiled the list of new Roses which the N.R.S. printed as a guide to exhibitors, and there was no person whose opinion on the merits or demerits of a Rose was more reliable.

The closing days of the year brought with it another great loss, the Right Hon. Lord Penzance, who passed away in December at the advanced age of eighty-four. His name will continue to be associated with the new race of hybrid Sweet Briars as the Penzance Hybrids. In the "Rosarian's Year-Book" for 1892 he gave an interesting account of his proceedings in this matter, and fairly set forth his successes and his failures. He brought out some fifteen or sixteen varieties, but I do not think that any of them excelled or even equalled the first two which he originated, Lord and Lady Penzance.

And now, my dear friends, having thus lightly touched upon the matter connected with the past year, let me give a word of encouragement to you for the future. I am rather like some of those old soldiers who have suffered in our wars, and yet with what deep thankfulness I can look on the pleasure which my garden has afforded me. It is true I can now only hobble about and partially enjoy the sight of the flowers I have loved so well, but this is what I must expect: the sportsman has to lay aside his gun, the angler can no longer throw his line, the huntsman's pinks are only contemplated as a thing of the past. All these may indeed tell what they have done in years gone by, but they are only memories, and he is wise who can be contented to regard them as such. When someone said to Talleyrand that he did not play whist, "But what will you do my dear fellow," he said, "when you come to be old?" and yet the time came when the old diplomatist could not distinguish a club from a spade.

And does not all this teach us that we ought to be looking forward to a better and more enduring inheritance? The teaching of Scripture with its figurative language makes a garden of trees and flowers as the future home of the saints. Strive then so to fulfil your duties that when you are enjoying the products of your gardens you may be encouraged to cherish those blessed hopes that our Heavenly Father has given you to cheer and strengthen you in your pilgrimage, and that you may be, as I say once again, a partaker of that Tree of Life which is in the midst of the Paradise of God.—D., Deal.

CAMELLIA BUDS DROPPING.

I AM glad to see a writer ("W.") recording the cause of failure by Camellias dropping their buds. It is refreshing to read records of this nature, as we are accustomed so much to read of successes. Deficient root action always causes bud dropping; much fire heat is another cause which is often overlooked; strong heat in the pipes is adverse to Camellia management at any time, and the forcing of the plants should be done during the growing season between April and July.

While I am thoroughly in touch with "W." I am prompted to refer to a case of "dropping," which troubled me somewhat. Buds which were set thickly on plants of the old double white dropped in great numbers. I found that the soil had been allowed to shrink from the sides of the tubs, which was only partly filled by careless hands when surfacing the soil was done after the plants had flowered and were starting into growth. The water ran down the sides of the balls, which effected growth formation, but plenty of buds were set which fell off in hundreds just before they should have opened.

When I discovered what was wrong, I filled up the space between

the roots and tubs, which was not more than half an inch wide. A smooth stick with sharp point was probed as deeply into the ball of soil as possible, and as thickly over the surface as could be done. The holes were filled up with dry sandy soil, and a good coating of soil and plant manure was placed over the surface.

The plants recuperated after the whole ball was well moistened, and are now laden with opening buds, and foliage green and glossy.—M. TEMPLE, Carron, N.B.

PALMETTE VERRIER PEAR TREES.

It was after an interval of many years that I called at Oldlands, near Uckfield, in Sussex, on the 27th of last March, to see some of the trees which I planted there about twenty-seven years ago. On the west side of the east kitchen garden wall there are nine palmette verrier pear trees, whose appearance was so striking that I asked Mr. Fitt, the very able and courteous head gardener, if he would kindly have them photographed for me. He did so, and I now send you a reduced plate of half of them (fig. 1), hoping that if it can be published in the Journal it may induce more general attention to the beauty and utility of trees of this form.

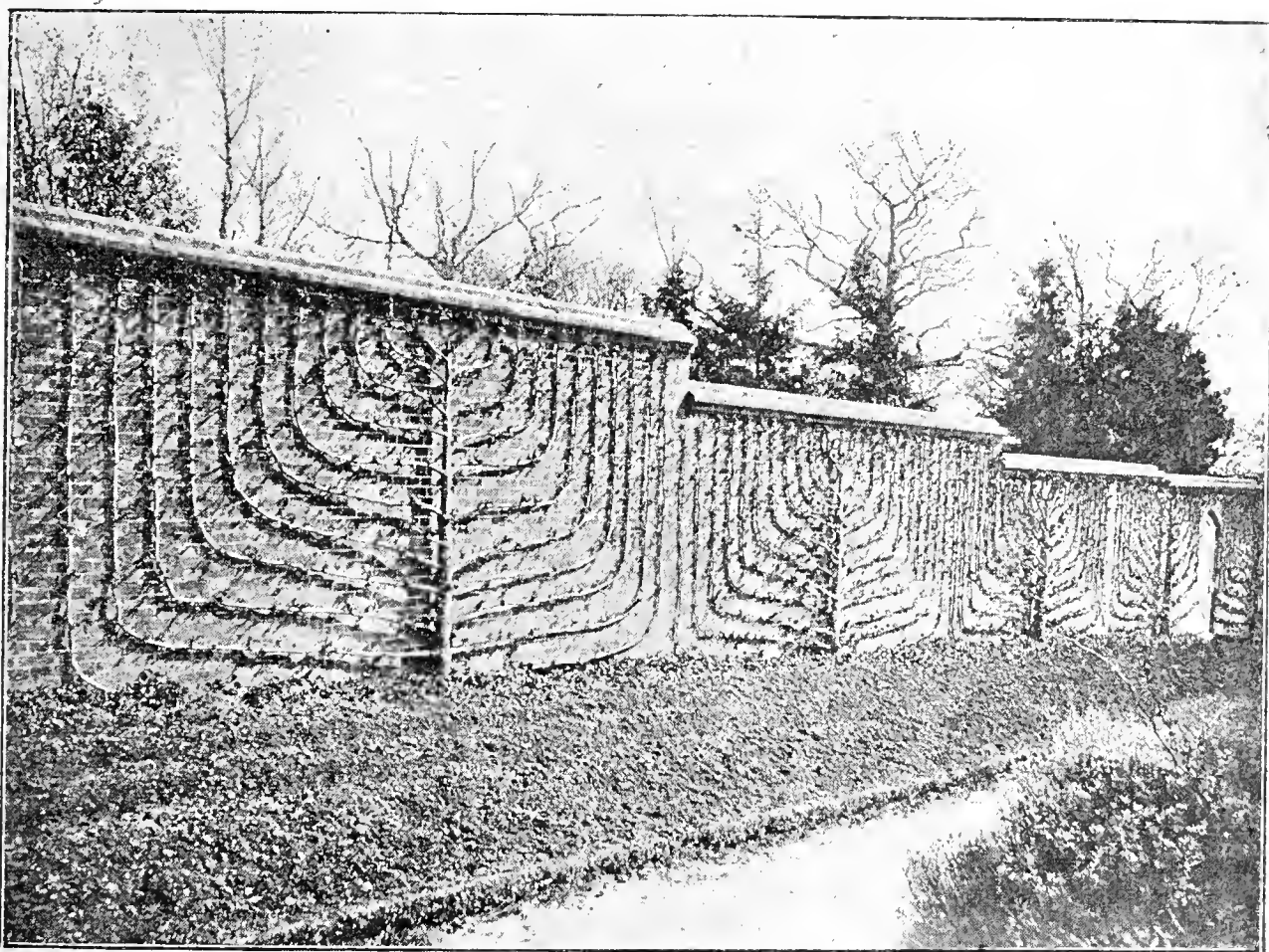


FIG. 1.—PALMETTE VERRIER PEAR TREES.

They are on the free stock, are perfectly healthy, affording a splendid object lesson in training so as to secure an equable distribution of vigour. In horizontal trees of such an age the lower branches would be enfeebled and worthless, but this can never happen to palmette verriers, because the tips of the branches are on a common level. It is simply owing to this that the lower branches, from their greater length, become under development the most useful, and they remain so always. This is so obvious that one really wonders at the general clinging to horizontal training.

It may be interesting to add that the tree in the foreground is that king of autumn Pears, Fondante d'Automne. In the last edition of the "Fruit Manual" Dr. Hogg appends to his description of it my note: "The fruit is large and handsome, of most delicious flavour, and is one of our best October Pears." That was a fair description of fruit gathered from this tree. It is also noteworthy the tree next it on the left, which is not shown in this plate, is a grand tree of Beurré Clairgeau. This Pear is usually only second rate, but on this western aspect, and in the favourable climate of Sussex, it was really excellent. Three years after the planting it had some fine fruit, most attractive in its rich colouring of red and yellow, of which my note says "it was gathered on October 12th, was in use throughout November, being very sweet, rich and juicy, with a delicious aroma." The other trees shown in the illustration are Josephine de Malines, one of the best late Pears, Beurré Rance, Maréchal de Cour, and Williams' Bon Chrétien.—EDWARD LUCKHURST.

FLOWERING TREES AND SHRUBS.

WHILE so much is being done towards the adornment of the flower garden it is surprising how few of the many beautiful flowering trees and shrubs are requisitioned, even in some of the best kept gardens; they are equally hardy, and no more expensive than many of the commoner kinds which we find so often repeated. Rhododendrons, Laurustinus, and Laburnums are still deserving of cultivation, but others may be planted that will vastly increase the beauty and enhance the charms of the garden.

We will begin with the Rhododendrons. Fine hybrids can now be procured in almost endless variety of colours and shades, and what can excel the massive beauty of their flowers? Can anyone but admit that they are simply magnificent? There is no difficulty in selecting varieties with foliage as hardy and as beautiful as a Laurel. But while admiring the hybrid Rhododendrons, we are even more charmed by their near allies, the hybrid Azaleas, which are quite hardy in many parts of the kingdom, but are seldom seen except treated as pot plants. A bed of Azaleas has no parallel amongst flowers with its dazzling shades of colour, ranging from the soft tints of primrose, sulphur, and yellow to the more radiant glories of apricot, salmon, orange, and vermilion. The perfume, too, is most delicious—an aroma which clings tenaciously, evaporating not, but permeating all around.

Passing on again, we have the great wealth of hardy Heaths, and their near allies the White Irish Heath (*Menziesia polifolia alba*), with its profusion of waxy blossoms, equal in appearance to the chaste bells of the Lily of the Valley. The plants continue to bloom for three or four months during spring and summer. *Kalmias*, also members of the Heath tribe, do not flower freely in some parts of the kingdom, but where they can obtain sufficient moisture to prevent the foliage becoming browned by the sun, then they ought to be planted extensively. Both *K. latifolia* and *K. myrtifolia* may safely be planted in moist sandy loam, near the sides of lakes or similar situations, and where they often receive partial shade. The wax-like flowers and foliage are really beautiful. Then, again, we have the beautiful spring flowering *Andromedas*, with their creamy white bell-like blooms, which are far from being sufficiently appreciated, for where compact plants of dwarf growth are required these do duty in a twofold form, with their charming flowers and fine foliage.

But what of the *Berberis*? Do we see these represented as often as they deserve? Of all small flowering shrubs what is finer than *B. Fortunei*, with its different shades of leaves, varying from green to yellow, and salmon to vivid red; or *B. Darwini* and *B. stenophylla* when laden with their rich gold and bronze-coloured flowers, the latter possibly the prettiest of all. And these are plants specially adapted for small gardens, as they may be pruned and kept to any size required. We cannot pass by the dwarf, compact-growing *Daphne cneorum*, with its rosy umbels, giving such a sweet fragrance that one is loth to leave it, even to have a peep at its near relative *D. mezereum*. The former will not thrive everywhere, but might well be extensively tried. It likes an open sunny spot during the summer, with a free root run in good sound loam. *D. mezereum* is a British plant which early in spring, sometimes as early as February, is covered with showy pinkish-red blossoms, and is one of the most valuable of spring flowering shrubs which ought to find a place in every garden. The hybrid white variety is also equally attractive.

Of the Snowballs the old *Guedres Rose* is the most popular, but that beautiful free flowering variety *Viburnum plicatum* is the finest, surpassing all others in habit, foliage, and flowers. The disposition of this plant to bloom profusely whilst quite small is not the least of its merits, to cause it to be justly considered one of the most valuable ornamental shrubs in cultivation. Much might also be written in favour of the hardy *Spiræas*, with their graceful spikes, plumes, and panicles, but many are not met with so often as they deserve. Of these *S. Fortunei* is worth attention as a plant which thrives in almost any soil and aspect, with grand deep rose coloured flowers; whilst the larger leaved *S. Lindleyana*, with its large terminal panicles of white flowers forms a remarkably handsome shrub in autumn when few others are in flower. The charming *Hydrangea paniculata grandiflora*, with its immense panicles, literally covering the branches with the flowers of changeable shades from pure white to pink, ought to be in every garden.

Of flowering shrubs in the latter part of summer we have few of any recognised merit. But what are more telling than some of the varieties of *Hibiscus*, yet how meagrely are they represented in most gardens. A group comprising both the double and single varieties in their different colours is fine, and almost as bright and cheerful looking in August and September as anything we have in spring.

Besides the foregoing there are many trees and shrubs, alas! too little used, which deserve a place in any garden; some on account of their peculiar and telling foliage, others their coloured fruit or berries, or strange habits of growth. No garden can be at all complete, or even satisfactory, without its complement of trees and shrubs. But

while enumerating only a few, there are many others which we hope to see more extensively cultivated, and to which we may at some future time refer.—T. GEE.

SILICO-FLUORIDES.

IT will, perhaps save trouble to such of the readers of the *Journal of Horticulture* as are interested in the various matters connected with the use of silico-fluorides in the garden, if you will allow me to point out that the silico-fluoride of ammonium affords a ready means of preparing any other silico-fluoride that may be required. For example, if the silico-fluoride of potassium is wanted, all one has to do is dissolve in rain water or distilled water some salt of potassium, such as the sulphate, chloride, or nitrate (saltpetre). On adding the silico-fluoride of ammonium to such solutions the silico-fluoride of potassium is immediately precipitated, while the sulphate, chloride, or nitrate of ammonium, as the case may be, remains in solution. Probably most people would use the nitrate of potassium for this purpose; saltpetre is tolerably cheap, and the nitrate of ammonium which results is a very powerful and valuable fertiliser.

The same remarks apply to the soluble salts of sodium and calcium; all are precipitated by the silico-fluoride of ammonium. Sodio silico-fluoride is slightly soluble in water (five pints dissolve 0.625 oz.), but the other silico-fluorides mentioned above are practically insoluble in cold water, so that they can be easily washed free from traces of other substances. For the guidance of your readers, the following data as to solubilities will be useful:—

Potassic sulphate dissolves in 11 times its weight of water.

„	chloride	„	4	„	„	„
„	nitrate	„	4	„	„	„

The sulphate, chloride, and nitrate of ammonium are much more soluble than the corresponding potassium salts, so that the silico-fluoride of ammonium may be used dry, and stirred directly into the various solutions. The quantity of it which must be used is as follows:—

1 oz.	potassic sulphate	requires	1.02 oz.
1 „	„ chloride	„	1.19 „
1 „	„ nitrate	„	1.76 „

Advantage may be taken of the foregoing facts by anyone who is troubled with hard water and prefers soft. Stir into a tub of hard water silico-fluoride of ammonium until a piece of blue litmus paper is turned red when dipped in. Then add a little more water, and continue to do so until the red litmus paper, when dipped in, regains its blue colour. As soon as the water has had time to settle, the tub will contain pure water with a little carbonate of ammonia in it, while the lime and other impurities will be in a solid state at the bottom. Carbonate of ammonia soon evaporates from any leaves upon which it may be sprayed, and meanwhile does them no harm.—W. MILLS.

— THE CULTIVATION OF MUSCAT GRAPES.—A report from the "Isle of Wight Express," of a voluminous paper by Mr. W. Tribbick, Brook Gardens, has been sent to us, and from which we take a short extract:—"I have grown Muscats for twenty years, during which period many gardeners competent to judge have affirmed that as a house of those Grapes mine would compare favourably with any in this country. They were also once considered so meritorious as to secure me a substantial rise of wages, not the least acceptable I can assure you of honours won. My vinery is 50 feet long, with inside border 12 feet wide, composed of rather calcareous fibrous loam, cut from down, where sheep are constantly grazing. This was taken 3 inches in thickness only, six months before required for use, first stacked for the decay of grass, afterwards broken not too fine. To each waggonload of this was added ten barrowloads of old plaster and lime rubble, five of wood ashes, five of gritty washings from high road water tables, and half a cwt. of very small bone. This compost was turned many times, the whole of the ingredients being thus well incorporated with each other. Very strong canes were planted in May, and permitted to grow quite naturally, without stopping or pinching, covering all of the roof before growth was completed. They were pruned back to 3 feet from the bottom of the rafters, and the following year allowed to carry three or four branches each. Some cultivators consider it unwise to commence cropping permanent Vines thus early, but I contend this had the desired effect of checking the almost too luxuriant growth made, and aided the production of full crops in shortest possible time. An initial mistake often made is in cutting back one or two buds, young Vines that have grown with exceptional freedom. This results in such excessive vigour as to make them unproductive the following season. Our Vines at the next pruning were shortened back to 9 feet, and carried nine or ten bunches to each rod of well-finished fruit, and the next year a full crop of fourteen bunches equally good. I prune on the spur system, but I have three times in twenty years run up new rods, four of the Vines having now two rods each, or fourteen in all, on which I annually secure about 200 bunches."

THE LATE DUKE OF WESTMINSTER, K.G. AN APPRECIATION.

To the general public his Grace was perhaps best known as a philanthropist of the highest order, and as a patron of the turf in the noblest and purest sense of the term. He was nevertheless greatly interested in horticulture, and gave freely of his large means for the encouragement of the educational and exhibitiv side of the art; a liberal supporter of the R.H.S., as well as a regular contributor to the funds of the various gardening charities, these institutions shared in his generous munificence. On the Eaton estate the Cottagers' Horticultural Show, which was started some years ago at the suggestion of his Grace, was a model of its kind, and in this both the late Duke and the Duchess took more than an ordinary interest.

The Chester Paxton Society from its inception benefited largely by his patronage and practical support, and on several occasions he delivered addresses at the opening ceremonies of its annual fruit and Chrysanthemum exhibitions, and his utterances on those occasions showed how keenly he was alive to the importance of extended fruit culture in our country. To the writer his Grace more than once deplored the apathy which this important industry received at the hands of those to whom it might easily become a source of income.

Of a highly cultured and refined nature, no one was a better judge of all that was beautiful in floriculture, and he made no concealment of his distaste for any productions in the shape of monstrosities. As an evidence of this, at one of the exhibitions just mentioned he described a group of perfectly grown Japanese and incurved Chrysanthemums to the writer as a collection of "mop heads," at the same time putting in a plea for more extended culture of the single varieties. Flowers which combined simplicity with delicacy and beauty appealed to him in a far greater degree than anything in the way of the large Chrysanthemum.

In the magnificent and well-appointed gardens of Eaton the Duke took a special pride, and appreciated greatly the efforts of his respected chief in this department, Mr. N. F. Barnes. No one lived more for others than did the noble Duke, and nothing gave him greater pleasure than to see his fellow men participating in and sharing the luxuries with which he was surrounded. It was always his desire that from the highest to the lowest the gardens at Eaton should at all times be accessible, a nominal charge being made only to excursionists during the summer months, and the sum thus realised was included with others for the benefit of the local hospital, the finances of the institution in this way being each year augmented by a total sum of not less than £500.

In addition to this, religion, philanthropy, science, literature and art, in fact everything that tended for the benefit of the people, received of his goodness. The Grosvenor Museum, Chester, which is now one of the best appointed institutions of its kind in the provinces, will ever stand out as a lasting monument to his memory, and it was here that one of his last public appearances in the old city was made, the occasion being the presentation of prizes of the Kingsley Memorial Fund of the Chester Society of Natural Science, Literature and Art. His loss to the country is great, and the citizens of Chester in particular mourn for one who was the city's greatest benefactor in every respect.—GEORGE PAXTON.

BROCCOLI NOTES.

A VERY dry period set in about the time our Broccoli and other greens were planted, many of the plants being destroyed both by the Turnip beetle and the drought. For some time they made little growth. Towards the end of August and the early part of September, however, the plants appeared to take a new lease of life, and grew rapidly, although the long looked for rain had not come. We experienced some heavy dews at this time, and these were, no doubt, the cause of the improvement taking place.

Although making such a bad start I must admit that my crop of Broccoli had never looked better, and as far as the early kinds are concerned, produced finer heads. It is rather too early to say much about the winter and later varieties, as we have already had a taste of severe weather, and perhaps may have more, although the frost has not been so severe in our garden as it has been in many places. The lowest registered has been 14°, 15°, and 16°, and I do not think any injury has been done.

A breadth of Veitch's Self-protecting Autumn Broccoli, one of the best for giving an autumn and early winter supply, has produced some grand heads, they being firm, compact, and white, many of them growing to a large size. This is a well known variety, and a good one to follow Autumn Giant Cauliflower. If a few rows are planted a little later than the general planting, heads may be cut well into the new year during a mild winter. We have cut useful produce as late

as the middle of January. Snow's Winter White is a good old standard variety, being one of the whitest and best Broccoli with which I am acquainted. It is a useful one to follow the last named. In some catalogues this variety is stated to be hardy, but this does not correspond with my experience. During severe winters I have found a much larger percentage killed than has been the case with several other varieties. Indeed for a few seasons I did not grow it for this reason. This year, however, it finds a place, about 150 plants being grown, which will soon be ready for use if the weather remain open.

Backhouse's Winter White and Knight's Self-protecting are a little later than Snow's, and are good hardy sorts to grow, but do not give such "refined" heads. Leamington is another fine old variety, and for general purposes one of the best. For giving a later supply we have two very good varieties in Sutton's Late Queen and Veitch's Model. The former is rather dwarf, having curly, dark green leaves, its habit making it fairly hardy. In this garden it never produces very large heads. Model lasts a little longer than Late Queen. It is a stronger grower, and produces heads of a conical shape. When walking round the gardens at Castle Howard last spring Mr. A. E. Sutton drew my attention to a large plot of this variety, and spoke very highly of it. He also asked me to examine two very fine heads he had marked, and if I remember rightly he intimated that they would be saved for seed.

When a border on the north side of a wall can be spared for a few plants of those late sorts, heads may be cut to a much later period. In the open garden during late spring the days are often very hot and bright, and the heads come in too quickly.—J. S. U.

PRUNING EVERGREEN SHRUBS.

THIS, I venture to think, is a matter that cannot be too often brought into notice, inasmuch as the proper pruning of evergreen shrubs, even by otherwise intelligent cultivators, is more honoured in the breach than in the observance. The apparent neglect by many owners of shrubs in the timely pruning or regulating of especially choice specimens is owing to a fear of or reluctance in manipulating them according to their needs, and the operation is postponed until eventually drastic methods are obliged to be adopted. This often results in the disfigurement of the tree, whereas an annual or other periodical application of the pruning knife would have obviated such severe measures as indicated. To none more than, for instance, Rhododendrons and the common Laurel do these remarks apply. Both, however, are readily amenable to the pruning knife or the saw and the "hedge-hook;" but where the work must be neatly done in regard to the cutting-back of old-established bushes with large limbs the latter tool may be dispensed with.

For hiding unsightly objects quickly a hedge or wide belting of the common Laurel is frequently employed; but if neglected in the matter of pruning the plants soon become naked beneath and top-heavy, thus defeating the object in view, and the only remedy is to adopt the drastic and undesirable operation of cutting them down nearly to the ground or replacing, if immediate effect is desired, by new bushes. I am cognisant of several instances at the present time which could be adduced in support of the argument indicated.

Regarding the period of the year for operating on neglected old Laurels, or, in fact, almost any other evergreen shrub, undoubtedly springtime is the best, when the sap is rising and the naked cutback branches and stumps are not unsightly so long as when the operation is performed in the autumn or winter time. There is also danger of severe frost killing them outright when cut back so early. The pruning may be done even later, but without so satisfactory results, as the force of the sap has become expended and the buds do not break so well. It is usual with cultivators to leave the pruning of Rhododendrons till after the flowering period, but when the bloom is scanty and the bushes require severe cutting, the operation is best performed in early spring, so as to afford a longer period for the ripening of the young shoots before the following winter. The only advantage that can be advocated in favour of the autumn or winter pruning of shrubs and trees is where labour is limited, and there is such a multiplicity of operations cropping up in spring that were the pruning deferred till then the chances would be that the work would have to be left until the autumn or winter following.

Connected with the manifold duties of the gardener there are few more interesting and requiring more judicious care than pruning ornamental shrubs and trees, so varied are they in their individual characteristics. In conclusion, I may add that it is excellent practice, time allowing, of course, to make it a rule, when passing any shrub requiring the removal of an obtrusive or half-worn out straggling branch, to cut it away instantly, and not defer the operation until a more favourable and indefinite opportunity.—W. G.



CRIMSON CARNOT.

AMONGST Japanese Chrysanthemums there is no type more popular than that known as the "Carnots." Of this family we have the original Madame Carnot, still I think the best of white flowered varieties, the rich yellow G. J. Warren, and the primrose Mrs. Mease, a charming trio truly. Next season we are promised the pink form; one of our leading specialists is in possession of several plants of this pleasing addition to the family. We now learn of a further addition, and a glorious one it will be—a crimson form of this elegant type of Japanese variety. From the appearance of the specimen in front of me I predict, if all goes well, it will cause a furore amongst Chrysanthemum worshippers, especially when it is known that the purchase of the stock will run into three figures.

ROBERT LAIRD.

This is an Australian seedling sent for distribution to Mr. Wells by Mr. John Pockett. Like many others of the strain this new Japanese bids fair to rank amongst the best of white flowered varieties. The florets are below medium width, each one curls at the tip, adding much to the beauty of the flower, which is of full size, quite solid, and with a stout peduncle.

YELLOW PRINCESS VICTORIA.

The parent of this sport is well known as one of the best late white flowering varieties, the semi-recurving flat florets rendering it a most useful decorative variety. The footstalk is stout, which is an all-important point in Chrysanthemums for vase decoration in a cut state. The yellow sport is an exact representation of its parent, and should prove most useful.—E. MOLYNEUX.

LETRIER.

"W. S., Wilts," asks (page 561) for the names of better late varieties than those he enumerated. I send a few flowers of Letrier which I consider excellent. As "W. S." says, Niveus and Lady Lawrence are very liable to fungus. If you can find any on either of the enclosed examples of Letrier, please say so. I have not one plant more than 4 feet high, including the pot. This is a French variety, and I shall be much disappointed if it does not become one of the best known Chrysanthemums. A pure white Etoile de Lyon is what I should describe the flower.—W. WELLS.

[The flowers were excellent, and if everyone who grows Letrier can produce specimens of equal merit at the new year the variety is sure to become popular.]

CHRYSANTHEMUM RUST.

IN Mr. Godfrey's Chrysanthemum list, just to hand, I find that he treats somewhat largely of that pest, the rust on Chrysanthemums, and propounds various recipes for checking its development. But it is interesting to find in dealing with this evil the remark put into italics, "I can positively state that affected plants have been sent out by every Chrysanthemum specialist in the kingdom." That is a strong assertion, and of necessity includes himself. Mr. Godfrey, I observe, strongly advises the use of that excellent instrument the "Abol" syringe, as with its curved nozzle it can be so readily used to spray the under sides of the plants and leaves. That is one fact of which all Chrysanthemum growers should take note, as the syringe is not costly, and may be found useful for the spraying of many plants besides Chrysanthemums. Mr. Godfrey specially advises for spraying the use of the well-known Bordeaux mixture on plants growing in the open ground in August and September, which is, of course, a big job, but seems to be by results amply repaid. Then he also strongly advises the use of sulphide of potassium, half an ounce to a gallon of water; but the sulphate of copper and lime solution seems to be best. These are remedies, or may it be said preventive applications, that applied in time seem to be efficacious, and may be obtained and used by everyone. We infer from the concluding paragraph of the rust remedies that no one need be alarmed concerning the pest if they will but take means to check its progress in good time, and not after it is too late.—A. D.

AGRICULTURE IN THE WEST INDIES.—We learn that his Excellency Sir John Hay, K.C.M.G., Governor of Barbadoes, has promised to meet the representatives of the various West Indian agricultural societies at Bridgetown on January 6th, 1900, and welcome them to an Agricultural Conference. Dr. D. Morris, C.M.G., is President of the Conference, and will open the business by addressing the gathering. By this means it is hoped that the scope of agricultural operations in the West Indies will be enlarged, and land industries more widely recognised and encouraged.

RHODODENDRON DAURICUM.

ALTHOUGH this cannot be classed as a first-rate garden plant, yet, flowering as it does in the winter, it forms a welcome addition to the very few outdoor flowering plants of this season of the year. A native of Dahuria and Mandschuria, it commences to grow and flower early in the season, a fault common to several plants from this region, and which, except in sheltered spots, deprives us of many useful and beautiful garden plants.

The flowers of *R. dauricum*, or *R. dahuricum* as it is often called, open between December and February, are about an inch across, of a bright purplish-magenta colour, and rather thin in texture, and, although spoiled by sharp frosts, will stand 5° or 6° without injury while the unopened buds do not suffer, but will expand later when the weather is more favourable. The leaves are small, being a little over an inch long by half an inch in width, and many of them are shed in the autumn, though it is not entirely deciduous. When bruised, the leaves and stems have an aromatic odour somewhat resembling that of Eucalyptus.

The chief point in dealing with this Rhododendron is to give it a warm sheltered spot, with a good background of evergreens, which will serve to show its brightly coloured flowers to the best advantage. When fully grown it forms a plant about 3 or 4 feet high with a rather upright habit.—C.

PEARS DECAYING AT THE CORE.

"SLEEPY" Pears we have long known, and I certainly have known some friends who professed to prefer them. Personally I never objected to their preference; in a large family, if one prefers the sleepy ones, there is all the more of the perfect condition left for the majority. But Mr. G. Abbey has told us that this "sleepy" condition is after all only the Pear in a far more lively form, many of them in this state swarming with bacteria. I have known several persons who liked Pears in this condition, but I do not recollect that any of them, after their enjoyment of this bacterial repast, were the worse for the meal, and yet it seems gradually forcing itself upon us that these atoms, if I am not calling them by a name that is far too large for them, are at the root of a very large share of the mischief which comes upon the human race.

Providentially there would seem to be in us beneficent germs that feed on the noxious varieties, and though the cry is, Still they come, and new forms seem to be continually cropping up, we may hope that these beneficent friends will be equal to the occasion. Alas! I am much afraid that the Pear is deficient in these beneficent germs to devour the destructive bacteria, if we may judge from this exhaustive report of Mr. Abbey (page 389, last vol.). I am a devoted lover of the Pear, believing it when in its best condition one of the grandest of our English fruits; but I gather from this report that the different varieties will require different soil, and that in our small gardens will be well nigh impossible. I note another point—namely, that on "stronger land," or after a "strong soil was given," then instead of ripening, the fruits rotted at the core. Were similar bacteria in this stronger soil? Can they get from one to the other?

My Doyenné du Comice trees failed this year to give me a single fruit, and it is additional news that *Monilia fructigena*, which I fancied loved the Plum and the stone fruits, will also attack the Pear. I found early this season several small Pears infected by the Pear midge (*Diplosis pyrivora*). I was thinning a tremendous crop of Marie Louise d'Uccle. The fact of finding this scourge for the first time in my garden, though I heard of it four or five miles off last year, made me give up thinning, fearing I might cut off good fruit, and I left the infected ones to disclose their injured condition later. The consequence, of course, has been that the large crop of fruit is nothing like so fine as usual. The large early-thinned fruit, I mean those picked off as nearly ripe, matured beautifully, and were excellent eating; but the smaller and late-picked fruit is now developing rapidly, increasing soft spots, whilst one cut through a day or two since, a large fruit, was a marbled brown completely through, without showing this much externally.

I expect the remainder now on my shelves will only reappear as stewed Pears, by no means bad in that way, but still not to be compared with the perfect ripe fruit. Now, as I must do something to check this pest on my Plums, which has robbed me of every fruit on my Jefferson the last two years, I propose to give the Pear trees as well a double syringing of sulphate of copper (1 lb. to 25 gallons of water) whilst resting, and again when the buds begin to swell; I have a sort of hope that the Pear midge may find this disagreeable, as I have no desire to see him or his offspring again.

Of late years we seem to be realising that the curse of sin is heavy on us; it is not only that "in the sweat of thy face thou shalt eat bread," but our fruits are also to be obtained under similar conditions, if at all. No one who has not seen the effect of the brown rot fungus on the Plum could imagine that a wealth of bloom

and abundant setting should still be utterly unequal to the task of bringing one single fruit to anything approaching its fair proportions, either in size, beauty, or use; nothing, in fact, but shapeless, rotten deformity.

Surely the labours of our friend Mr. Abbey, Miss Ormerod, and others, are not a bad answer to the question in another page of the same number of our Journal that "Gardening is advancing."

Evidently, if bacteria are a new development of this century, they are come to stay; they meet us now at every step, and it is against them that so many of our battles will have to be fought. I have tried Mr. Fenn's anti-blight on several things this year, and think it decidedly checks some of these troubles, but I think I have used it too late, forgetting, alas! that "Prevention is better than cure."

And now, Mr. Editor, I must stop, yet as somewhat bearing on this important subject I would crave space for this amusing sketch, which appeared some ten or fifteen years ago in the columns of "St. James's Gazette," and which is certainly worth reproduction. It was entitled:—

THE LOVES OF THE BACILLI.—A PHYSIOLOGICAL IDYLL.

(The Comma Bacillus is, according to Koch, the germ of cholera.)

Quoth Bacillus to Bacilla
(Surely everything has sex);
It is quite enough to fill a
Soul with pride, to see the necks
Of these mighty men of science
O'er the microscope bent low,
While beneath them in defiance
Spins the merry Vibrio.

Proud am I to think, my Comma,
While the world rolls on its way,
Every fell disease springs from a
Fairy filament, they say.
Autocrats, that tower Titanic
Have been known to bow to me;
Mighty potentates in panic
Disinfect at thought of thee!

Rash would he be, who should presage
That no germs behind us are;
We are part of that great message
That outrings 'twixt earth and star.
What by thousands or by tens is
Multiplied, in vain they show;
Something lies beyond his lenses
Mortal man may never know!

We are greater, my Bacilla
Than all monarchs; for meseems
We need but exist to fill a
Strong man's brain with fever-dreams.
Such the thought, my passion kindles
O my microscopic bride:
Kiss me! although twenty Tyndalls
Have their eyes upon the slide!—H. S. C.

There is plenty of space for deeper thoughts in several of these lines.—Y. B. A. Z.

PRUMNOPITYS ELEGANS.

THIS is one of the few Chilean Taxads that can be grown outdoors in this country, being of about the same degree of hardiness as *Araucaria imbricata*, though it is far less fastidious with respect to soil. On the Andes of Chili, where it occurs frequently, it forms a small tree 40 or 50 feet in height, well furnished with spreading or sometimes drooping branches; but in this country it forms a dense, pyramidal tree about 15 feet high, well clothed with rather stiff branches to the ground.

When young the plants are nearly always of an upright habit, but with age they gradually broaden at the base, and assume a pyramidal form. It can be propagated from seeds or cuttings, but the young plants should be in a sheltered situation for a year or two, as severe weather kills the growing points, and causes the plants to become stunted, a state which it is very difficult to get them to grow out of.

The leaves are linear in shape, about an inch long, of a deep green above and glaucous beneath, and are densely clustered around the branches. The name of the Plum Fir is sometimes applied to this plant, probably on account of its purplish fruits, which are about the size of a Grape, and are said to have an agreeable flavour when ripe. There are probably no trees in this country large enough yet to bear fruit, so the question of edibility must be left to the future to decide, but judging from nearly allied plants which have fruited, the fruits will probably smell much better than they taste.

This plant is sometimes known under the name of *Podocarpus andina*, but *Podocarpus*, though a closely allied genus, has its fruits solitary on a fleshy stalk, while in *Prumnopitys* they are borne on a loose spike. In other respects the two genera closely resemble each other.—C.

VIOLETS FOR EXHIBITION.

"A. J. L." (page 521) says, "So far as I know these popular flowers are not represented at our shows for competition." In this he is not quite correct, for at some West of England shows prizes are offered for them staged in glasses with their own foliage; it is true, however, they are not encouraged as they might be. This is, I believe, only a matter requiring time, for Violet cultivation is being taken up more freely than has ever previously been the case.

The exhibits of Messrs. House & Son, Westbury-on-Trym, have done much to popularise Violets, both for home use and exhibition. They have a large area of land set apart for the newer varieties, and it would seem their cultivation has arrived at a high stage of perfection, judging from the size of the flowers and the length of the stalk. Violets are favourites with everyone, and it is a matter of some surprise that prizes should not have been offered for them before.

The great numbers of Chrysanthemum shows that are crowded into the space of a month render it impossible for a tithe of the varied exhibits to be noticed in reports, and it is not unlikely that this has led your correspondent into thinking they are not favoured with a place in prize schedules. These newer Violets are well adapted for growing in pots, and at some shows prizes are offered for them up to a limited size, and it cannot be disputed but that such a class would be popular.

Violets in frames for winter buttonholes have been found in most gardens for many years, in some cases, too, in which a frame or two furnish the whole extent of glass. Since the introduction of Californica, Princess of Wales, and others of kindred type, even in small gardens one finds Violet culture taken up with much greater enthusiasm than in former days, and if this continue—as is certain—they will in time become standard exhibition flowers and plants. Chrysanthemum societies can do a great deal to extend this newer phase of Violet culture by offering liberal prizes for these fragrant flowers at their autumn shows.—W. S.

XL ALL VAPORISING COMPOUND AND THE PHARMACEUTICAL SOCIETY.

It is strange that the XL All compound should not have been attacked before now. How is it that they have left it alone until it has become known to practically every horticulturist in the kingdom, and has become almost indispensable for use in the garden as an insect destroyer? It has been suggested that had not the trade in this gardener's requisite developed to its present proportions, the attention of the Council of the P.S. would not have been drawn to it by its members. Why this sudden discovery of the fact that the XL All compound is a preparation which contains a percentage of nicotine? And why are they so fearful that someone will drink it, when it is manufactured and sold expressly for fumigating greenhouses? Why has it taken six years for them to discover that this is so dangerous, after it has been sold by nurserymen, seedsmen, and florists for this length of time without a single accident? To all unbiassed minds the answer suggests itself.

It appears that neither the Pharmaceutical Society nor its members have any control over the sale of carbolic acid or its preparations, and these can be freely purchased anywhere for domestic use, and seem to stand about some households quite unguarded. If this and other poisons of a similar character can be and are sold without any restrictions for household purposes, surely the horticultural trade may claim the right to sell a preparation of nicotine for use (quite apart from the dwelling house) in greenhouses, which in nine cases out of ten would be stored in an outhouse in the garden.

It is the opinion of many that all interested traders who have suffered from similar interference at the hands of the P.S. should organise a society to watch over their interests, and to bring their grievances before Parliament at the earliest date possible, with a view to getting the Act of 1868 amended, so as to enable agents other than pharmacists to sell poisonous preparations for technical purposes (in the manufacturer's original packages) to the trades and professions, which in the ordinary course of business it should be their legitimate right to supply, of course under necessary restrictions.

The Pharmacy Act of 1868, as affecting the sale of poisonous preparations for technical purposes, does not appear to be understood by one and all alike. It must be clear to all but the most nervous people that the skill of a pharmacist is not at all necessary to sell a farmer a tin of "sheep dip." Why, then, should he not be able to get it from the same source of supply as his other farm requirements?

Again, why should a gardener not be able to order his fumigator or weed-killer from his nurseryman or seedsman together with his bulbs or seeds, thus saving the expense and annoyance of having to obtain one requisite from one source and one from another? Next we shall hear of nurserymen and seedsmen being prosecuted selling any kind of insecticide, and bulbs and seeds containing poison may not go exempt.

I shall be glad to receive communications and suggestions from anyone who is willing to join such a movement as is above indicated.—G. H. RICHARDS, 128, Southwark Street, London, S.E.



RECENT WEATHER IN LONDON.—The closing days of 1899 were particularly pleasant, the sun shining brilliantly for several hours. The early hours of the new year, however, brought a change in the form of a heavy fog, which was followed on the evening of Monday, Tuesday, and Wednesday with heavy rain.

— WEATHER IN THE NORTH.—The last fortnight of the year was marked by variable weather. Up to the 23rd ult. dull days with sleety showers were occasionally brightened by gleams of sunshine. Frost then set in, which increased in intensity till the 28th, when 23° were recorded. Thaw followed on the afternoon of that day, and the year closed with three days of cold highish winds and drizzly showers. New Year's Day was dull and cold, 4° of frost being registered in the morning.—B. D., *S. Perthshire*

— ROYAL HORTICULTURAL SOCIETY.—The first meeting of the Committees of the Royal Horticultural Society in 1900 will be held as usual in the Drill Hall, James' Street, Westminster, on Tuesday, January 9th, 1 to 4 P.M. The Scientific Committee will meet in the library on the same day at 4 P.M.

— THE EPPING FOREST COMMITTEE.—On the motion of Mr. Edward North Buxton, J.P., it has been resolved that the members of the Committee express their great indebtedness to Mr. John Lobb for the admirable manner in which he has fulfilled the requirements of his office. He has exhibited, the resolution states, an earnest desire for the welfare of the Forest, and the interests of the public therein, and has devoted much valuable time and unremitting attention to the work of the Committee. By the able, urbane, and impartial manner in which he has presided over their deliberations, he has greatly aided his colleagues, and fully earned their hearty acknowledgments.

— THE CHISWICK POTATO TRIAL.—I am pleased to learn that it is Mr. S. T. Wright's intention so far as is practicable to act upon a suggestion I recently made, that in conducting the trial of early Potatoes determined upon at Chiswick this year, planting of the same varieties early and late in rows side by side will be made, so that apart from the merits of the individual variety, the best time for planting may be tested also. All those who purpose sending in varieties for trial, and only quite early ones should be so sent, should not only send as soon as possible, but also sufficient tubers to enable this duplicate planting to be carried out. The trial would in such case be all the more interesting. There are very many first early varieties in commerce, the merits of not a few of which are little known. It will be specially interesting to note how far from out of the legion of new varieties the old Ashleaf Kidney maintains its reputation for earliness. The trial should, if growth be not checked by frost, prove to be one of exceptional interest.—D.

PERISTROPHE SPECIOSA.—About three-quarters of a century has passed since this plant was introduced to English gardens, and like many other good old things it has been pushed into the background by more recent introductions. That it is worth growing is apparent from its effective appearance in the few places where it is well grown. It is an Indian plant, and under good cultivation makes a bush from 3 to 4 feet high, which from Christmas onwards for eight or ten weeks makes a very fine show with its pretty purple flowers. To have it at its best, cuttings should be rooted each year, old plants being thrown away. Cuttings may be inserted in sandy soil in March; they root readily, and require growing on quickly without a check until autumn. A mixture of two parts loam to one of leaf mould and one of decayed manure is a suitable compost, and 7 or 8-inch pots will be found large enough for the largest plants. Frequent pinchings will be found necessary until the end of July. When the pots are well filled with roots, feeding must be attended to. A cool, airy house is the best place for the plants after they have become established in their final pots, and growth should be completed by the end of October. Insect pests must be well looked after, as one of the most important things is to keep the leaves healthy.—W. D.

— GARDENING APPOINTMENT.—Mr. Jas. Gibbins, for six years general foreman at Knowsley Hall, has been appointed head gardener to the Earl of Sefton, Croxteth Park.

— LIVERPOOL HORTICULTURAL ASSOCIATION.—On the whole, the Liverpool Horticultural Association has had a very fair year, and the annual dinner, which is to take place at the celebrated Bear's Paw Restaurant on Saturday, January 20th, is certain to bring together a large company. No better musical programme could be arranged than that got up by the sub-committee. The speeches, once so full of interest, have disappeared during the past year or two, and if the speakers lacked eloquence I could have understood it, but in this respect Liverpool can hold its own, and a few toasts are always appropriate at least once a year. Not only as a member of the Committee, but as a representative of many others, I would ask those responsible to revive once again a much enjoyed custom.—R. P. R.

— JUDGING MELONS.—How unconsciously has Mr. Temple in his note on this subject last week emphasised the need for tasting Melons in judging them when he said that the task was disagreeable, so many badly flavoured fruits to be tasted often producing nausea. Well, I have tasted a good many, and, like so many others, have not swallowed the flesh of an offensive Melon, as such ordeal was needless. But what an admission of the generally objectionable character of Melons shown for prizes is thus made, and what a strong argument is thus furnished in opposition to granting such things prizes from appearance only. I think that judges who do adopt the tasting test, as a rule, look for something besides mere sweetness. They look for soft, pleasant flesh, and good flavour. If these things are not found in Melons the faults lie not with the judges, but with the bad culture shown in producing them.—K.

— THE BANISHED EELWORMS.—When the Editor wrote his short note headed "Fungoid Diseases" on page 565, he did not, I fearfully expose what was in his mind. Doubtless courtesy towards friends kept him in restraint, for when he wrote with regard to "W. B.'s" intimation that he had with a mixture of Veltha and phenyle exterminated the eelworm, but did not know which ingredient did the business, "that probably Messrs. Wood and Co. would favour Veltha, and Mr. Abbey phenyle." Whilst the ordinary man might exclaim, "A plague on both your houses! it was neither ingredient, but it was the whitewashing and the fresh soil that got rid of the pests." Now had these wonderful chemical remedies been applied to the old eelworm infested soil, and "soaked" with them, and as a result had exterminated the worms, what a triumph would it have been for one remedy or both. But soaking fresh soil with them, that perhaps was entirely free from the pest, seems nothing to boast of.—A. D.

— READING GARDENERS' ASSOCIATION.—The annual general meeting of the Reading and District Gardeners' Mutual Improvement Association was held on Monday the 1st inst., and was well attended, the President, C. B. Stevens, Esq., occupying the chair. Before the usual business was commenced the President announced the Judges' awards in connection with the Essays arranged during 1899. They were as follows:—"The Planting of a Garden with Hardy Fruit Trees and Bushes." (Open to all). First, Mr. G. Hinton, The Gardens, Walmer, Reading. Second, Mr. E. Trollope, The Gardens, Coombe Lodge, Whitechurch. Third, Mr. C. P. Cretchley, The Gardens, The Honeys, Twyford. "Plants Suitable for Table or Room Decoration, and their Culture." (Open to assistant gardeners only). First, Mr. J. Botley, The Gardens, Blythewood, Maidenhead. Second, Mr. C. Townsend, Whiteknights Gardens, Reading. Third, Mr. T. Pembroke, Greenlands Gardens, Reading. The adjudicators were Mr. T. Turton, Sherborne Castle, and Mr. J. Hudson, Gunnersbury House. The annual report and balance-sheet were read by the Secretary, and proved of a very encouraging character. The election of officers for the ensuing year was then proceeded with. A feature of the meeting was a magnificent display of Primulas. Mr. Townsend, The Gardens, Sandhurst Lodge, showed *P. obconica rosea*; and Mr. F. Lever, The Gardens, Hillside, sent well grown *P. sinensis* in small pots, as well as good plants of *Lachenalia pendula*. Mr. Wilson, The Gardens, Redlands, exhibited well-coloured specimens of Newton Wonder Apples. The best thanks of the members present having been given to the exhibitors and to the past officers, the first meeting of 1900 was brought to a close.

— **DEATH OF MR. JAMES SELDEN.**—We learn with regret of the death on the 25th ult., at The Gardens, Brookwood Park, near Alresford, of Mr. J. Selden. He was erstwhile known as an exhibitor in the Kingston and Wimbledon district whilst gardener at Coombe Cottage, Kingston. Mr. Selden's decease was due to a severe attack of influenza, followed by pneumonia. The deceased was in his forty-ninth year.

— **RHODODENDRON INDICUM VAR. BALSAMINÆFLORUM.**—One is pleased to see that hardy flowering shrubs are having the prominence given to them that is their due in the columns of the Journal, and that the competent writers of the articles are doing them justice. "W. D.," in the article on "Hardy Peat-loving Shrubs," mentions *inter alia* that *Rhododendron indicum* var. *amœnum* is hardy as far north as Chester. I do not think that it is generally known that the exquisite little *R. indicum* var. *balsaminæflorum* is hardy here in the east of Kirkcudbrightshire and close to the Solway. It is a charming little shrub with double crimson flowers shaped like those of a *Camellia*-flowered *Balsam*, whence I suppose the name. I believe it is best known in gardens as *Azalea rosæflora*, but it has also been known as *A. Rollisoni* and *A. balsaminæflora*. It is grown on the top of a rockery but partly shaded by other plants. The soil is sandy peat. When Mr. James Backhouse of York was here in 1899 he was surprised to find it so hardy.—S. ARNOTT, *Carsethorn by Dumfries, N.B.*

— **BRISTOL GARDENERS' ASSOCIATION.**—The fortnightly meeting of the Society was held at St. John's Parish Room, Redland, on Thursday, 28th ult. A large number of members were present. The subject for the evening was "Mistakes in Gardening," introduced in a racy and exhaustive manner by Mr. Chas. Lock of Keynsham. Dealing with the subject generally, he suggested that many gardeners erred in judgment when they decided on the profession as a means of livelihood, and whilst the same might be said about any trade, he contended that no one who was not an enthusiast should adopt a vocation that claimed so much of the time and thought of the worker as did horticulture. He went very fully into mistakes amateurs and professionals made in various branches of their work, giving useful hints as to avoiding pitfalls, and concluded by pleading for more sympathy between gardeners and their employers. A short discussion followed, and Mr. Lock was heartily thanked for the paper. The President, H. Cary Batten, Esq., kindly offered three prizes for three plants in bloom in pots not more than 5 inches in diameter. For these there was good competition, the awards being:—First, 10s., Mr. McCulloch; second, 7s., Mr. Raikes; third, 5s., Mr. Ross. Mrs. Cary Batten kindly distributed the prizes, and in responding to a vote of thanks, expressed her regret at the absence of the President, her pleasure in being present at such an interesting gathering, and wished the Society every possible success.

— **EMIGRANTS' INFORMATION OFFICE.**—The January circulars of the Emigrants' Information Office and the annual editions of the penny handbooks show the present prospects of emigration. The notice boards are now exhibited, and the circulars may be obtained free of charge at nearly 500 public libraries and institutions throughout the country. It is too early in the season for the ordinary emigrant to go to Canada, unless he has friends to go to or money to keep him till the spring, when there is likely to be the usual demand for competent farm labourers. In New South Wales there is practically no demand for ordinary farm or station hands. In Victoria there is not much improvement in the general demand for labour, except that a considerable number of those out of employment have been set to work on railway construction. There has been a considerable amount of settlement on the land recently, and dairying has made special progress. In South Australia there has been a demand for farm hands, and for married couples without children for farm and station work. In Queensland there has been a general improvement in trade and in the demand for labour; the depression has almost entirely passed away, and the disposal of the unemployed has ceased to be a difficulty. There is a good demand for farm labourers. Free and assisted passages are now being granted to farm labourers. In Western Australia the population, though it has rapidly increased, is still small, and therefore the demand for all kinds of labour is necessarily limited. The chief demand is for farm labourers. In Tasmania the supply of farm labourers is sufficient. In New Zealand competent farm hands and shearers have no difficulty in getting work in country districts during the present busy season. With regard to South Africa persons are warned against going there at the present time in search of work.

— **DESTRUCTION OF ANTS.**—The latest method of destruction of ants is said to be the use of gasoline. Pour about a half pint of gasoline into the ant hill or nest, and set it afire. The gasoline will instantly spread through all the nest, and as the heat on the surface increases the gas will generate from the utmost recesses, and the fire will cook the ants. Half a pint of gasoline will burn from three to eight hours, and kill every ant in the largest nest, as well as all which attempt to enter it from without.—("Tropical Agriculturist.")

— **THE HORTICULTURAL DIRECTORY AND YEAR BOOK FOR 1900.**—The forty-first issue of this familiar annual, or handy book of reference in gardeners' homes and the offices of business men connected with horticultural pursuits, is now ready, and advertised in the present issue. It is larger than any of its predecessors, contains more addresses of gardeners than before, with changes received up to the time of going to press; also lists of nurserymen and florists at home and abroad; a descriptive register of new plants that were honoured during the past year; much information of permanent value, with a great variety of the best garden requisites of leading firms and representatives of the industry of horticulture. The work may be fairly described as a big shilling budget of gardeners and gardening.

— **ALOE SOMALIENSIS.**—This new species is flowering for the first time at Kew, the specimen being in the Mexican house. It was collected, together with *Kalanchoe flammea* and other things, by Miss Cole in Somaliland in 1895, and through her it reached the Kew collections. It is a dwarf-growing species, the plant in question being but a few inches high. It forms a dense rosette of leaves, which are from 5 to 7 inches long, $2\frac{1}{2}$ inches wide at the base, tapering to a point, the margins armed with stout prickles, and prettily mottled light and dark green in colour. The flowers are small and pink, produced in quantity on a branched raceme 2 feet in height. For lovers of succulent plants this will be a welcome addition, the marbled leaves being decidedly ornamental.—W. D.

— **THE WEATHER 100 YEARS AGO.**—According to a record in the "Annual Register" there were only 173 dry days in England in 1799. By a diary kept at Norwich the number is shown to have increased to 214 in 1800. There were twenty in January, twenty-three in February, fourteen in March, seven in April, twenty-three in May, sixteen in June, twenty-eight in July, sixteen in August, fourteen in September, seventeen in October, fifteen in November, and twenty-one in December.

— **SUSSEX WEATHER.**—The total rainfall for December at Abbot's Leigh, Haywards Heath, was 1.69 inch, being 1.05 inch below the average. The heaviest fall was 0.27 inch on the 29th. Rain fell on fourteen days. The total for the year was 31.14 inches, which is 1.43 inch above the average of twenty years. The average yearly fall for the ten years, 1880–1889 inclusive, was 30.65, that of the ten years, 1890–1899, was 28.77, thus reducing the average for the twenty years to 29.71 inches. The maximum temperature was 52° on the 1st, the minimum 16° on the 16th. Mean maximum 41.10°, mean minimum 30.17°; mean temperature 35.63°, which is 2.46° below the average of eleven years.—R. I.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1899.										
December.										
Sunday 24	N.N.W.	deg. 41.1	deg. 40.5	deg. 45.1	deg. 31.0	ins. —	deg. 38.5	deg. 41.5	deg. 45.4	deg. 28.5
Monday 25	N.W.	36.4	35.1	42.2	30.5	0.06	38.1	41.5	45.5	23.0
Tuesday 26	S.W.	38.2	37.6	41.6	33.3	0.05	37.2	41.3	45.3	23.0
Wed'sday 27	N.W.	28.5	27.9	34.2	27.6	—	37.3	41.1	45.2	26.0
Thursday 28	E.	35.0	34.7	49.0	26.5	0.17	36.5	40.8	45.1	21.0
Friday .29	S.S.E.	49.5	46.0	50.1	34.5	0.20	38.8	40.6	44.9	33.1
Saturday 30	S.W.	45.6	40.9	47.9	43.9	—	40.9	41.5	44.9	37.3
MEANS ..		39.2	37.5	44.3	32.5	Total 0.48	38.2	41.2	45.2	27.5

A week of frost and rain with intervals of bright sunshine, and a gale on the 29th.

GREETINGS AND GRUMBLINGS.

"IN the dark and trying hour; in the breaking forth of power," comes another year. Brave sons of the empire—soldiers of the Queen! Is there any fellow feeling, apart from that of country, kith, and kin, engendered by what is essentially peaceful work? Peaceful work? "There is no peace for a gardener," said one of the craft lately. That is so; and where there is no peace then is there perpetual warfare to uphold the suzerainty of the gardener's empire, and that is so. "I'm killing 'em by millions," he continued, "and still they come." Sufficient here to "stagger humanity," or, at least, to startle that portion of it who, drawing so largely upon the gardening world for their necessities and luxuries, know not the great natural forces in continual and combined array against the man of peace (?)

They do not know, and it all looks so easy. "You just dig and sow, and plant, and hoe, to gather up the fruits and flowers in their due season." Would that some who think so lightly of gardening could gain a little insight; gather a little wisdom by reading the war correspondence gleaned from one year's pages only of the *Journal of Horticulture*. It would be to the mutual advantage of master (or mistress) and man if a little better understanding did exist on these matters; for what is not understood is always liable to be misunderstood, and, what is more, often is. Unfortunately gardeners as a rule seem to be the worst men in the world to give simple explanations of plain truths. "It's not a bit o' good argufying, just grin and bear it," was the precept of a past master; one who had unconsciously adapted to his wants and woes the old French motto, *Qui s'excuse, s'accuse*. Silence is not always golden.

If some men seek safety in silence, others in making rash statements find them recoil to their own detriment. "Well, sir, you see they breeds nine times every hour, and has nine at a time." Such was the actual conclusion, but not the final one, of an argument between another worthy man and his master anent that most insidious of bugs and beasties, the mealy bug. Facts and figures should clinch an argument. They did not, however, in this case, in spite of the remarkably precise birth rate statistics in point of time and numbers. It was regarded as a subterfuge to conceal sins of omission, and worse still, repeated by "the master" to his friends over the dinner table, by one of whom the writer was interrogated upon the matter, without much further enlightenment, may be added. A wider disseminated knowledge of these visible and invisible foes might, one thinks, often bring more sympathy and less blame to the man who is fighting them year in and year out. True, it will sometimes be heard in the gardening ranks, "My master," or "my mistress" (generally "my mistress"), "knows too much." But that's another grumble and another tale.

"A happy new year to you." No heartier exchange of the old familiar greeting is given than amongst the rank and file of gardeners. Such a grip has just been given to our hand by an old friend—so vigorous, so squeeze-ful, as to place that opinion beyond question, and accompanying the well worn wish so heartily, almost painfully, impressed was the hope that our "Mum" cuttings were making a good start. Ah! well, that's another tale, too. There is a good deal of human nature in gardening, and we know he wants to beat us at the show, and although that is still in the dim and distant future, he is looking ahead. He knows, as all real gardeners know, a good start means a good finish, provided, of course, the end is never lost sight of. Is there a gardener, may we ask, now looking over the new year's number of "our Journal" who, in turning over a new leaf, is not looking ahead?

1900. Cold, wet, peevish, piling last-born of Father Time! Who can discern in thy puckered lineaments what thou shalt do for us or against us? Why such perfervid greetings, dynamic hand-shakings, at the advent of one of whom little more can be said (and that is always safe to say of most infants), that it's like its father? "Like begets like." A few inches more or less in the rain-gauge; a few degrees up or down on the thermometer! The veriest trifles in the solemn march of time, in the sublime economy of Nature.

"How like eternity doth Nature seem
To life of man, that short and fitful dream."

Much they mean, we know, in garden work; but somehow those who have conquered in one direction are best braced to fight in another, to the end that unkindly elements are robbed of much of their severity. There is so much uncertainty about these new years, with corresponding anxiety, that one almost wonders why gardeners, of all men, should hail their birth with acclamation. "We live in hope," is a common saying. It might go farther by saying we live on hope, and true it is that without uncertainty there would be no hope, for it is the legitimate offspring of it, and, possibly, no living. What a tame thing gardening would be if returns were always reduced to the dead level of exact ratio to outlay! "Actions are ours, events are God's."

In endeavouring to forecast the horoscope of this new gift of time

any startling horticultural developments can scarcely be expected, although the craving for something fresh remains unabated. True, man's ingenuity and Nature's compatability are not yet exhausted, if ever they will be, and many novelties will, of course, appear with a flourish of trumpets, and eventually disappear in silence to swell that great crop in the land of the long-forgotten. A big trophy for Grapes, or something or other, is in contemplation to spur men on to deeds of derring-do. The 100-guinea challenge cup, shield, or vase, is a grand idea—at first sight; yet, somehow, the more one reflects upon it the more it seems to resolve itself into what an Irish friend calls a powerful weakness. Many, most of course, believe in it, but, like some precious relic upon which the eyes of the faithful may gaze but at rare intervals, it will of necessity be enshrined in some sanctuary, therefore, to most intents and purposes, be *non est*. There is just the wish, no more, that these honours and glories could be embodied in a more practical form. It is the wishing season, and having unselfishly lavished good wishes abroad among our fellow-men, we may, each and all, in the quiet moments of self-communion, come nearer home in these concluding apostrophic lines—

"Build thee more stat-ly mansions, oh my soul!
As the swift seasons roll.
Let each new temple, nobler than the last,
Shut thee from heaven by a dome more vast."

—A. N. OLDHEAD.

HARDY BORDER FLOWERS.

ANTHOLYZA PANICULATA.

ONE must speak of the Antholyzas among "hardy" flowers with some degree of reserve, as our experience of them planted in the border in this country is limited. One has, however, seen them grown under such diverse conditions that one feels justified in advising their more extended cultivation. Plants of such fine effect are none too plentiful, and their handsome leaves and distinct flowers will give a character to the border in which they are grown. They are bulbous plants from the Cape, but those which belong to tropical Africa are not adapted for the flower border and thus need no notice at present.

Perhaps the best for the garden of hardy flowers is *Antholyza paniculata*, which I think I have previously had the pleasure of naming in the *Journal of Horticulture*. It is a noble plant, with its fine, plaited leaves, and its tall many-flowered spikes with their bright red-yellow flowers. It will grow from 3 to 4 feet high. It comes from the Colony of Natal. *A. æthiopica*, which has some three varieties besides the type, is also a fine plant, but I do not think it is quite as hardy as the preceding. It also has red-yellow blooms. *A. caffra* has red flowers, and narrow, linear leaves. It was called by Sweet, *Anisanthus splendens*, and by Dean Herbert, *Gladiolus splendens*. *A. Cunoniana* only grows from 1 to 1½ foot high, and has red flowers. *A. quadrangularis* has variegated yellow and red perianths, the upper segment being red. *A. spicata*, *intermedia*, and *saccata* have never come under my observation in the open ground.

The Antholyzas ought, at least until we have further experience of their needs, to have a warm sheltered border in light soil, with a little protection in the way of cocoa-nut fibre refuse, dry leaves, or similar material in winter. I have seen them as far north as Stirlingshire growing vigorously, and without having had any winter covering. It has been recommended that they should be lifted annually to remove the offsets, but this is unnecessary, as they grow into fine clumps if left undisturbed for a longer time. The crowns of the corms ought to be at least 3 inches below the surface.

IRIS SUSIANA.

We are all apt to suppose that gardening is one of the exact sciences, and that if a plant does well with us under certain conditions it ought to do as well with others. But this is not the case. There are differences of soil or climate which may be inappreciable to us, but which to a marked degree affect success or failure in the cultivation of the plant or plants we want to grow. This is abundantly evidenced in the remarks on *Iris Susiana* (fig. 2) which have appeared in the *Journal* of late. That your able contributor "R. P. B." (page 540 last vol.) has succeeded in growing and flowering it most successfully without any artificial ripening is beyond question, but it is also undeniable that others who have grown it in a similar way have failed. It has been notorious for many years that it is not an easy plant to flower. That this was the case long ago is proved by the citation from Gilbert on page 540. His knowledge has been confirmed by generations of flower growers since his time.

Even yet we must, I think, confess that there is no "royal road" by which we can secure the annual flowering of either *I. Susiana* or the other *Oncocyclis* Irises. I dare not say that Rev. H. Ewbank's method is sure to result in success. This would be untrue, but it is correct to say that none have been so successful as he in flowering these wonderfully beautiful flowers. At the same time I would not venture to say that all those who followed Mr. Ewbank's plan were satisfied with the results. My experience in my own and other gardens is that it is not infallible, although the principle recommended is a

good one to follow in its main lines. Have we not Sir M. Foster's practice on almost similar lines? If I may be allowed to make a further remark, it is that we are as far off a diagnosis of the true cause of the failure of *Iris Susiana* as we were at first. We have, however,

IRIS KÄMPFERI.

I am anxious to return to this *Iris* very briefly with the object of bringing out more clearly the view I strenuously hold, that in most cases it is by no means necessary to keep the plants dry in winter.



FIG. 2.—IRIS SUSIANA.

apparently an agreement that Mr. Upex is not likely to succeed with his in their present place. Of the various *Oncocyclus* Irises that I have grown I find *I. lupina* the easiest to manage. It flowers in my garden under conditions in which *I. Susiana* is a complete failure.

This is not easily secured in many places, especially because at that time we have more moisture than in ordinary summers, when it has been recommended that they be kept moist. One may, for example, instance the plants in the bog at Glasnevin Royal Botanic Gardens.

There are often 6 inches of water over the soil in winter, yet it would be difficult to find healthier and more floriferous plants. This season I visited a Scottish garden where equally good results were secured, and the plants were on the margin of the lake, but in the water, all winter. I have plants doing equally well in and at the edge of water.

[If our several contributors can produce flowers equal to that portrayed by our artist it is only reasonable to suppose they will feel satisfied.]

ANTIRRHINUMS.

It is needless to say much about our old Snapdragons, which are known to everyone in the shape of *A. majus*, which is generally treated as an annual or biennial. One seeks, however, some information about one or two others mentioned in books, but, apparently, not available for gardens. These I do not know, but I am in hope that some readers may be able to give us information. One of these is *A. siculum*, with "white or yellowish, rarely purple, flowers," growing from 1 to 2 feet high. There is also *A. hispanicum*, with purple flowers with a yellow lip. It is said to grow 1 foot high. It has purple flowers, the corolla, according to the "Dictionary of Gardening," being the largest of the genus. Probably none of these are equal to our old *Antirrhinum majus*, which has in the course of years been greatly improved. *A. asarina* is better adapted for the rock garden than the border, and is, besides, not particularly hardy; although it proves hardier in some places than one would expect. It is not an erect but a procumbent plant, with greyish leaves and yellow and white flowers.

APHYLLANTHES MONSPELIENSIS.

This is a pretty and distinct little plant, which one very seldom meets with even in large collections of hardy flowers. It belongs to the Lily family, and has small heads of neat, deep blue flowers barely an inch across. The branches are like the leaves of the Rushes, and the leaves are absent; the flower scapes being leaf-like. The Montpellier *Aphyllanthes* is a native of France. It likes a light, warm soil and a sunny situation. It is increased by division. It cannot be called a showy plant, but is both interesting and pretty. It is fairly hardy under the conditions of cultivation suggested.—S. ARNOTT.

COMBATING CANKER.

It seems to be a general drawback of the leaflets emanating from the Board of Agriculture to leave altogether out of account the facts which practical experience has slowly accumulated, and to draw the line at scientific teaching. The one published in October was fairly well equipped in this respect, but the leaflet on canker quite eclipses that. The worst of such teaching is that those who are attached, perhaps a little unreasonably, to old-fashioned views, and who give little if any attention to what science has done, not only in the elucidation of the forces at work which cause disease, but also of the means for combating these forces, become disgusted, and fail to reap any benefit from papers otherwise suggestive.

The question of spraying in winter may in some instances prove not without value, though where trees are not permitted to grow beyond easily manageable dimensions its necessity is not so apparent, provided methods already in practice, such as excision of diseased wood, are carried out, such promoting a healthy root system in appropriate soil. The advice to discard varieties of fruit notoriously susceptible of infection is commendable, for though canker, like other diseases of a fungoid character, is somewhat mysterious, there is nevertheless no difficulty whatever in detecting certain Apples that canker, by its virulence, renders unprofitable to cultivate in some positions.

But the writer of the leaflet has made a mistake in too closely identifying certain kinds, as under every circumstance, or in every locality positively under the power of canker. What is the fact is that many Apples, of which I may name such well-known varieties as Cellini, Lord Suffield, Stirling Castle, Wellington, Blenheim Pippin, Cox's Orange, and Gravenstein, from a list that might be considerably extended, are in some gardens apparently canker-proof, and in others so susceptible of attack as to be practically not worth growing. These are matters which give a more or less unsatisfactory flavour to the whole, a particular kind of scientific teaching that ignores practical facts.

The teaching that cultural treatment has nothing whatever to do, either in the production—or perhaps the better expression would be the introduction—of canker, or in its suppression, is a question of greater import. There is no better known fact regarding the Potato disease than the so-called disease-proof qualities of some varieties, but it is equally recognised that these require a regulated treatment to preserve them so. Tomatoes present another instance, perhaps not so well marked. One might go a step further, and, if philosophically inclined, proceed to show that these diseases, if not the result, are at least the concomitants of cultivation under highly artificial conditions extending over protracted periods. They are the inevitable outcome of highly civilised plant life. But it is obvious that cultural methods are capable of modifying or, on the opposite, intensifying those

conditions; and as we find that wet and naturally cold soils, as well as those of a dry gravelly nature, produce a growth very susceptible of canker, so it is possible, by improving the latter class by the addition of good imported soil, and the former by draining, and in extreme cases surface-planting, to render canker at the least a less virulent disease.

I think there is reason to suspect that a tree continually underfed, or one growing in a soil naturally deficient in plant foods, to be peculiarly open to the attacks of canker. I have noticed in the case of old Holly hedges to which nothing in the way of feeding had been done, and also where bushes were growing singly in positions where roots of deciduous trees had robbed them of nourishment, that canker has proved almost fatal, and surface dressings have proved exceedingly beneficial, the cankered portions having of course been removed.

Growth, robust yet sturdy and well ripened, is what one desires for the production of high-class fruit, and the conditions which produce such growth appear to be those which also render the tree most largely proof against canker. Rank manures on this account are always to be shunned, and sound loam with proper chemical foods to be commended. The addition of iron to soils was some years ago confidently asserted to be a certain antidote, but though I have employed it with good results to the general health of trees, its effect in lessening canker cannot be said to be anything but problematical. Certainly it does not cure it. In the form of ferric sulphate or green copperas it forms a cheap manure, but the commercial article requires not a little labour to pound it sufficiently fine for use.

A method of at once stopping the progress of canker, and lessening its bad effects by means of excision of the portions attacked, might be more generally practised with always good results. If the bite has not been deep or widely extended the wound heals in a surprisingly short time, and even in bad cases where the wood has been eaten away to the "hard" a clean skin may be caused to grow along the edges. It is, however, necessary in order to secure good results that every bit of tainted wood be removed, and the cut be made smoothly with a sharp knife. The wonderful results achieved on various cankered trees by Forsyth at Kensington Gardens a hundred years ago, and which he attributed to the merits of a simple composition, were no doubt due to the care he took in eliminating every portion of diseased wood and bark. While much can be done by the knife in the removal of canker, it is also certain that careless pruning exerts a distinctly ready means of promoting its spread. This is especially apparent in the case of vigorous young trees, whole branches, and sometimes the entire tree, being lost through an injudicious wielding of the knife. There is only one thing to be done in such cases, and that is the excision of the cankered portions as soon as they are noticed. For the same reason all "snags" and dead spurs should be not merely cut off, but cut into living wood, by which means a skin is quickly formed over the wound. The evil effects of frost on Apple trees are, I think, perhaps less than is sometimes supposed. I do not know of an instance where canker has followed cracks in bark caused by frost.

It ought to have been more clearly indicated when noting the good effects of excising cankered wood, that the dead portions if left form a capital nidus for this insidious fungus to propagate its species. At present the plant is easily discovered in these portions by the dull red globular processes which mark an advanced stage of its life history. Hence the importance of at once removing the plants with its host, and also giving the tree an opportunity of healing its wounds.—B.

FORCING RADISHES.

EARLY and tender Radishes, if well coloured and quickly grown, are much appreciated at a time when salads generally are not plentiful. To secure them in this condition at an early period they must be grown in the mild and gently forcing temperature of a hotbed. French Breakfast and Wood's Early Frame are the two best varieties for early forcing.

The heat produced solely from hot-water pipes is not so good for this crop as that generated by a hotbed formed within a frame, or built specially with a frame on the top. A brick pit filled with fermenting material is the best for early crops, as the heat is not so readily lost, which is important. The materials for forming a hotbed should be composed of stable manure and leaves in equal parts. Shake out the manure in a heap, and add the leaves at the same time. Turn the heap once or twice, then place in the frame, treading it firmly.

A bed 3 feet thick will be of a bulk sufficient to produce a fairly lasting heat, but the height of the bed may be brought to near the glass, as the materials sink in the course of fermentation. On the surface of the bed place 4 inches of soil. Good garden soil, or old potting soil mixed with leaf mould or fine vegetable matter, is admirable for the purpose.

Make the surface level and sow the seeds thinly, taking a little care in distributing them, as under such favourable conditions every seed will germinate. Cover them after sowing with just enough soil to hide the seeds from view. Keep the soil moist, but this will be maintained

if the lights are kept closed and shaded until the seedlings appear. After that abundance of light is necessary, and air daily except in unfavourable weather.

Any appearance of crowding must be promptly prevented by thinning, but this must be done as soon as it is obvious that the roots will be thickly placed.—E. D. S.

ALLOTMENT AND COTTAGE GARDENS COMPENSATIONS FOR CROPS ACT 1887.

WHAT is supposed to be the first claim under the above Act has been made before the Croydon Bench by Mr. J. Cooper, of Carshalton, for £50 as compensation for crops, against Mr. Chandler, of Croydon. As the Act provides for the appointment of an arbitrator, the magistrates appointed one of their number, Mr. A. H. Smee, F.R.H.S., to deal with the case. As the arbitrator seems to have unlimited powers in procedure and as his award is final, the case is of interest to both owners and occupiers of small plots of land.

It may perhaps not be generally known that the Act in question provides that when the tenant of a cottage garden or allotment is compelled to quit his holding he shall be entitled, notwithstanding any agreement to the contrary, to obtain from the landlord compensation in money for crops, including fruit, in the ordinary course of cultivation, for labour expended and for manure applied after securing the last crop, for fruit trees planted with the written consent of the landlord, and for certain buildings, also erected under similar consent.

In the case under notice the land, about three-quarters of an acre, was sold by the plaintiff (Mr. Cooper) to the defendant (Mr. Chandler); then a written agreement was entered into between the parties by which the former owner became the tenant at a rental of 2s. a week, and this tenancy Mr. Chandler determined with a week's notice, which ended in July. Hence the action. Mr. Smee held his inquiry at the Croydon County Bench on Thursday last, and we take the following report from the "Croydon Advertiser":—

Prior to the case being opened, Mr. Smee said he had been appointed as arbitrator to the magistrates. He understood that this was the first case of the kind that had been tried in that court. He did not himself know any precedent for these proceedings, and he should be glad if the solicitors on either side could refer him in their experience to cases similar to this. To his mind it was very unfortunate that this application had not been made earlier, for at the present time they all knew that the crops would have ceased to exist, or had been considerably reduced in value by frost and other things. What he proposed to do, and what he hoped would meet with the approval of the solicitors, was to take item by item, and see the amount of good that had been under different specific cultivation. It seemed to him, looking at the Act, that he had to value the crops not as on a particular day, but as to the value when they would come to maturity. He would like to bring it to their notice that in connection with allotment ground he had sold to the Rural District Council, it was found necessary, by the requirements of the Allotments Act, that the tenant should be given notice to clear, and six months' notice was given. He had made it a practice to look round the allotments in the district every year between the 1st July and August Bank Holiday, and from his experience as horticulturist was able to judge of the state of the crops in the district, and he thought it would be a fair thing if he considered this claim on the basis of the average crops, unless the plaintiff could on the one side prove to him that his crops were superior to the average, and unless the defendant could prove that they were inferior.

Mr. Newnham (plaintiff's solicitor) said that as far as his experience went he could not refer the arbitrator to a previous case. In his view the crops should be valued as on the date of the determination of the tenancy as between the incoming and the outgoing tenant.

The Arbitrator said he proposed taking great pains over the case. He considered it important as establishing a principle. He took it that the Act meant that the man should have full market value of the crop.

The Clerk (Mr. Stayner) pointed out that it was unusual to have gardens or allotments at a weekly tenancy.

Mr. Newnham—Defendant gave a week's notice, and turned the plaintiff out at once. He allowed him no more time.

The Arbitrator—I cannot understand why it should be considered as a weekly tenancy when a man enters into a series of operations for the cultivation of land. He should not be expected to give up at any moment.

Mr. Newnham—Having given a week's notice, the landlord excluded the tenant from the ground and let it to someone else. He was not allowed to return to it.

The Arbitrator—I think I have to determine what the compensation should be for turning a man out in the most active time of the year, when he would be particularly occupied in the garden.

After some further discussion of technical matters the Arbitrator suggested that, as it was likely to be a troublesome case, and that he was bound to make some award, the parties should try to settle the matter among themselves without going further into the matter.

A short adjournment was made, but no agreement being arrived at the case proceeded.

After hearing evidence on both sides on the nature of the crops the Arbitrator said that when he had particulars of the claim he took them home and went through them carefully, and put down an amount which he thought was right. The only result of the inquiry would, if anything, be to make him increase that sum by £1 perhaps. He had gone into this case most carefully for the reasons he had given. He had spent a considerable time in horticulture, and he had endeavoured, as far as possible, feeling the great difficulty there was in estimating the value of crops which had perished and crops that had not been gathered and turned into money,

to arrive at an award which would be satisfactory to both. The sum he proposed was £16 10s., each side paying their own costs.

The money was at once paid.

It will be observed that though there was a written agreement (which was produced) of a weekly tenancy, it was of no effect under the Act; also it will be noted that while the Arbitrator took a broad, practical view of the case, he was not deceived by inflated values, and set, we think, a good and sound precedent.

THE USES OF HOTBEDS.

THERE are many purposes to which a hotbed may be put, including the forcing of Rhubarb and Seakale, sowing small seeds of vegetables and flowers, rooting cuttings of softwooded plants, and growing Cucumbers and Melons. Except for the purpose of forcing growth of Rhubarb, Seakale, Chicory, and raising seedlings of some early varieties of Cauliflowers, Mustard, Cress, Radishes, and Lettuce, it is fully early in the season to form hotbeds. The earliest hotbeds are best made in brick pits, as these will conserve the heat better than one built in the open air; indeed it will not be possible to maintain a good temperature for any length of time without lining the beds with fresh additions of fermenting material.

The materials for the construction of hotbeds must be collected, and then undergo a period of preparation before utilisation for the purpose in question. Undoubtedly the best materials are horse droppings containing plenty of long litter saturated with urine, and tree leaves, those from Beech and Oak trees being better than leaves of a softer character. These may be placed together during the present month, as opportunity permits, and eventually be well shaken out and mixed. They will require turning two or three times, and may then be formed into a bed. Horse manure heats rapidly and strongly, but the leaves tend to correct this. They not only subdue the heat, but prolong the heating power of the hotbed, hence their value when intermixed with manure is great.

Unless absolutely necessary, I would not recommend an open hotbed, that is a square bed of fermenting material with a frame on the top, for the first six weeks of the year, except where only a mild heat is required, such as for early Radishes or Lettuce, and forcing Mint. Within the confines, however, of brick walls, an early hotbed would be more useful because retaining heat longer.

Hotbeds are not needed so early in the year as formerly, owing to the facilities of obtaining a constant temperature by means of hot water pipes, but for produce that requires only a gentle heat and some moisture the hotbed is preferable. On the whole hotbeds are valuable adjuncts if there is convenience and material to form them. In most gardens several might be profitably employed during the months of March, April, and May. Half-hardy annuals may be sown during March in pans or boxes; cuttings of Lobelias, Petunias, Fuchsias, Coleuses, and similar softwooded plants will root readily in the genial atmosphere of a hotbed.

If the temperature is sweet and ranges about 65° to 70° choice seeds will germinate, but the same temperature must be maintained for the seedlings afterwards, so that they do not experience a check in their early growth. When a hotbed becomes half spent or partially exhausted it is an excellent place on which to sow successional crops of Radishes, Lettuces, or Carrots, to prick out Celery and seedlings of half-hardy annuals. In April hotbeds may be formed and seeds of Cucumbers, Melons, and Vegetable Marrows sown in pots. The two former to be planted on mounds of soil in other well heated frames, and the latter transferred to cold frames to harden for planting in the open with a little protection until the weather permits of full exposure.

When the heat of a hotbed and the sun combined give a temperature of 75° to 90° such plants as Dracenas, Indiarubber, and others may be propagated. A hotbed in March is useful to raise Tomato seedlings, but the after growth ought to be made in a drier and airier house or frame. The seed of Primulas will germinate in the genial bottom heat of a hotbed, and afterwards the young plants can make their first growth and become established prior to their continuing growth in a cold frame for the summer. Cuttings of Chrysanthemums intended for dwarf plants can be rooted in May or June in the genial temperature of a mild, half-exhausted hotbed.—E. D. S.

SPLITTING OF APPLES.—"A. D." (page 566, last vol.) is rather badly adrift in this question. In his endeavour to construct a theory he has begun at the wrong end with regard to the principles of heat and cold. Some years ago I was taught that water swelled when heated, not when cold, and practical proofs of the matter can be found in pipes bursting at the thaw following a severe frost, hot water circulation, steam engines and things, but these have not apparently entered into "A. D.'s" calculations. Possibly had "A. D." laid the fault with the shrinking skin instead of the swelling flesh, he would have been nearer the mark in such a case as he describes, but, I am not going in for theory manufacture. What a fascinating pursuit it is to approach the mysterious. But I always deny myself the luxury, in print at any rate, and it is a good old truism that circumstances alter cases, even of Apples splitting.—H. RICHARDS.

WATERING IN WINTER.

My first observation on the question on plants "damping" in frames and greenhouses in the winter will possibly take some persons by surprise, but its truth will be admitted by others of wider experience. It is this. Numbers of plants are ruined by the decay of their stems and the base of their leafstalks in winter through being kept too dry at the roots. The very fear of giving water, and the manner and time of giving it, create the evil that it is desired to avert. Applying just sufficient water to moisten the surface of the soil daily, and no more, is the worst practice that can be adopted, and the evil is aggravated if the water is given towards the close of the day.

To begin with, the whole of the plants in a collection never require water at the same time, and to give it to those that do not need it is to do them distinct and decided injury. This is an old story, but it is true, and it is better and more useful to tell it once again, and with emphasis, than to search for some novelty to express and record nonsense. Again, to give a uniform quantity of water to all plants, regardless of their differing conditions, can no more be defended than could the unheard of practice of making a weak and helpless child drink as much as a strong man engaged in exhaustive work. This method of giving support to plants and individuals is alike unreasonable, yet while it is often adopted in the case of the former, common sense rises in rebellion at the very suggestion of its application to the latter. Let the same common sense be exercised in giving support to plants, increasing or diminishing it according to the measure of their activity and exertions, and very different results will follow than from those accruing from an indulgence in the free and easy policy of treating all alike; for by this plan most or all must suffer sooner or later, some through being overgorged, others from starvation.

But to the question of damping from drought at the roots. It is in this wise. Give daily sprinklings, and what is the result? The soil is wet where there are few or no roots to imbibe the moisture, while down below, where the most active roots are established, there is no moisture to imbibe. What follows? Simply this: the plants will not die without a struggle, hence attempt to absorb through the stems what is denied them at the roots, and perish in their effort to prolong life, damping through the decay of the cuticle. This occurs the more quickly if water is given towards evening and the night temperature is very low, for dry roots and a cold moist atmosphere are a fatal combination. The remedy is obviously to reverse those conditions.

Plants in a growing state, no matter what they are, should no more be allowed to suffer from drought at the roots in winter than in summer. In nature plants and trees are not as dry as dust in winter, yet they do not damp off in well-drained soil from which water passes freely; but they enjoy the counteracting influences of a free circulation of air that periodically conveys the moisture from the surface, leaving the earth moist below. Moisture there does no harm provided it is not stagnant; nor will moisture in the soil in flower pots. Let the roots have what they need and not more than they need, while the surface is comparatively dry, and with a buoyant atmosphere and genial temperature there will be little or no danger of the decay of the stems or leaves near the surface of the soil.

"Yes," the puzzled novice may observe, "that sounds right enough, but how can we give water to plants without making the soil wet on the surface in our desire to keep the roots moist below?" It is not a question of momentary wetness of the surface, for that does no harm if water is given when plants need it, and only then, on the morning of a prospectively fine day, or when the air can be warmed artificially, and the top ventilators slightly opened for the dispersion of moisture.

Sharp currents of air should be avoided through the front sashes, these causing a chill to the plants by arresting the transit of sap. Anyone can have a conclusive example of this who may happen to have Vines in full leaf in frosty weather in March, the roots being in an outside border, and the stems encased in haybands, for he has only to remove a portion of the covering and expose a few inches of the stem of one of them to the frost and the leaves will speedily flag, no matter what the temperature of the house may be. Permit, then, no sharp wind to drive through the ventilators directly against plants in greenhouses in the winter. The air in a plant structure can be speedily changed through the top ventilators alone, the cold outside air sinking by its weight into the house and displacing the lighter, because warmer, air inside. Admitting air without a draught or sensible inrush of cold is the secret of successful ventilation.

To return to watering plants in greenhouses in winter. They should be examined every morning, and water as warm as the house given to those that are more or less dry on the surface, and those alone, passing all others, even if they remained wet for a week. But in this matter thought must be exercised, always remembering that a great mass of soil containing few roots may get drier with impunity, and even with benefit to the plant, than can a lesser bulk of soil containing many roots; or, in other words, a large plant well rooted in a small pot will take, and must have, more water than should be given to a small plant not well rooted in a large pot. If water is applied to the plants when the soil is in a state to require it, crumbling more or less when rubbed, it is very soon drier on the surface than it is below, provided sufficient be given to pass to the drainage; and it must be given to that extent, or the work will not be well done. It is well if not more than that is applied, especially in damp houses,

for a stream passing through the soil indicates success, rendering the air of the house moister than is desirable under the circumstances. Water should be used, not wasted. It should be given sufficiently, but not in excess, to plants that need it, and withheld entirely from those that do not require any. There must be no half waterings, no dabbings or dribblings, no spilling on stages or floors, and any that accidentally falls where it can do no good, but may do harm, should be promptly dried up. That is, as far as my experience goes, the way to water plants in greenhouses in the winter. They must not suffer through drought then any more than at any other periods, but at the same time there is great danger in forcing water on them when the soil already contains sufficient for their support during the twenty-four hours next ensuing.

A word on imported Camellias. Healthy-looking plants, set with buds, in small pots, have generally been grown in damp frames or moist pits, and the pots are usually filled with roots. If these plants are arranged on open stages in dry houses there is great danger in letting the soil get too dry before giving water. As a rule they are best stood on a close base, and damp rather than otherwise; for if dry air rises upwards, such as from hot-air pipes, and acts directly on the under sides of the leaves, the moisture is extracted from them too rapidly, the leaves curl and the buds fall. It is better to syringe them occasionally on dry days than to permit extreme transpiration; and on no account must the soil get so dry at any time as to shrink, even slightly, from the sides of the pots, or there will be no flowers. It is safer to err in slightly overwatering instead of underwatering these root-bound Camellias, but an opposite course will be safer in the case of plants with a limited extent of active roots in large pots.—J.

EXPERIMENTAL GARDENS.

SINCE the inauguration of County Councils that part of technical education known as horticulture, which should be of inestimable value eventually to the cottagers of England, has received in some counties special attention—we may notably mention the counties of Surrey, Kent, Essex, Worcestershire, Derbyshire, and Cheshire. We must not omit to mention also the excellent work the Duke of Bedford is doing in practical horticulture at the experimental fruit garden at Ridgmont. Where there is no stint of money and brains the results should be gratifying to everyone concerned, and of practical utility to every cultivator of the soil.

In addition to the above mentioned counties it may interest your readers to know that in the Isle of Wight something is being done to further horticulture from a practical point of view, and with that object in view the County Council has acquired a piece of land which was formerly a market garden in Newport, about 1½ acre in extent. This unfortunately will be much reduced in the near future by the erection of a free library and other buildings. Still sufficient ground will remain to carry out trials of fruits, flowers, and vegetables on a small scale, which should result in much good being done towards the development of horticulture in the Garden Isle.

A range of greenhouses has been built in which will be grown fruits, flowers, and plants for experimental and teaching purposes. In the south-east corner of the garden is a small rockery for a miscellaneous assortment of rock plants and Ferns. On the walls are trained trees of Figs, Peaches, Nectarines, Apricots, Cherries, Apples, Pears, and Plums, whilst against the piers are double cordon Apples and Pears.

In the open are varieties of many of the aforementioned fruits in bush, pyramid, half-standard, and standard form, a large bed of Gooseberries in thirty varieties, and also a bed of Red, White, and Black Currants in fifteen varieties. Raspberries are represented by thirteen, and Strawberries by twenty-five varieties respectively. Between the rows of fruit trees, which are about 40 feet apart, will be grown flowers and vegetables.

The past season has not been one of the most advantageous to a newly planted garden, yet under the circumstances the results have been most satisfactory. The primary objects of the garden are:—

- 1, To test the value of new fruits, flowers, and vegetables alongside the older varieties, also to ascertain their value for cropping purposes and the quality of their produce.
- 2, To teach by practical demonstration various horticultural operations. These I need not enumerate, as your readers are fully acquainted with them.
- 3, To illustrate forms of plant life, their habits of growth, and cultural requirements.
- 4, To test the effects of manuring and non-manuring, and the effects of different manures in varying quantities on different subjects.
- 5, To test varying methods of treatment on similar varieties of subjects with an object of ascertaining information for practical use.
- 6, To test the effects of various fungicides and insecticides.
- 7, To show the advantages of good cultivation over the bad and indifferent.

The latter object has been fully shown during the past season. The trees, which were mulched after planting, and received during the summer periodical syringings, made free growth and produced healthy foliage, whilst those left to take care of themselves were stunted in growth with small and thin foliage.—S. H.



LÆLIO-CATTLEYA DOMINIANA.

YEARS ago, before the parentage of this charming hybrid had been really proved, it was recognised as one of the finest Orchids in cultivation; and latterly, when more care was taken in keeping records, and in choosing good varieties of the separate species as parent, the results were still more satisfactory. Quite recently I saw a very pretty form of it, and even now, with the immense number of fine hybrids, we have few to surpass it. Its relation to that superb *Lælia*, *L. purpurata*, is shown in its beautiful colouring, while its variability is equally and obviously due to the same relationship.

LÆLIA ALBIDA SULPHUREA.

This is a very attractive variety of a choice and beautiful little *Lælia*. By no means rare in the usual acceptance of the term it will in all probability be rarer as time goes on, many hundreds of plants being frequently imported, only to flower respectably for a time and then to rapidly pass out of condition and become of no value. If any reader of the *Journal of Horticulture* has been successful with this variety or the type he would be doing a service in recording his methods. By successful I mean over a number of years, not less than six or seven at the least.

CÆLIA MACROSTACHYA.

Not many species are included in the genus to which this pretty Orchid belongs, and it is perhaps the best known of all. From a roundish leafy pseudo-bulb it throws up an erect spike of silvery rose blossoms, each with its attendant white bract, and though the individual flowers are small they are charming in the aggregate. A good place for it is the coolest part of the *Cattleya* house, or where *Lælias* of the anceps type thrive. It likes a moderately good compost, consisting of peat and moss, with a little loam for strong plants.

The pots must be well drained, as during the time growth is active an abundant supply of moisture must be allowed. After this a short and sharp dry rest is necessary, or no flowers will be produced. I have known plants to grow for eight or nine years without showing a single flower spike. I rest it in quite a cool house—much cooler, indeed, than the majority of Orchids care for—and find that a somewhat rapid change to a warmer house usually induces the production of abundance of spikes. The flowers are produced at various seasons, but mostly in autumn and early winter. It is not often imported, though said to be common in various parts of Mexico, whence it was sent to Chiswick in 1841.

CYMBIDIUM GIGANTEUM.

This is a useful winter-flowering species when really well established, but often for the first few years in this country it is rather shy. It is a capital grower, in habit similar to *C. Lowianum*, but the flowers are quite distinct. Fortunately, too, for the health of the plants, the latter do not last as long as those of the better known kind. These, when allowed to remain, as they will do for months at a stretch, are a great strain upon the resources of even the strongest plants, and will often kill weaker specimens outright if the practice of leaving the flower is persisted in.

With *C. giganteum* the flowers, though very lasting, do not remain fresh quite so long, and therefore strong plants are uninjured, even if allowed to carry the blossoms until they fade. Both need exactly the same treatment, and are attacked by the same insects. They like a cool moist house, and it does not matter whether this is devoted entirely to Orchids or not. It often does well in a cool fernery, and I have a very large specimen now in flower in such a house. Good fibrous loam, peat, and chopped sphagnum make a capital compost for it, and the pots should be large and well drained. *C. giganteum* is a native of the Himalayas being found at considerable elevation.

LÆLIA AUTUMNALIS.

Mr. J. Barker has a very interesting note on this species, and I quite agree with him as to the necessity for plenty of fresh air and a buoyant atmosphere. Although at times we meet with plants doing well in more heat and moisture, it is quite certain that the growth can hardly be too well consolidated and hardened as it is grown, the plants then being able to withstand any slight check—unavoidable in some cases—that may happen.

I also agree that if it were possible to keep the temperature at the figure your correspondent names it would be an advantage, but this species and other Mexican *Lælias* require ample light, as he points out; and if this is allowed, it is quite impossible to keep the temperature down to 65° on a hot summer day. It may be managed by very heavy shading and keeping the house close, but not other-

wise; and I have on many occasions proved that sun heat, when ample air is allowed, does not harm these plants in the least. It is only when accompanied with considerable moisture and with insufficient ventilation that any harm accrues. I only mention this point to prevent any amateur readers attempting to keep the temperature down by the means indicated, as it does far more harm than good. —H. R. R.

LÆLIA GOULDIANA.

HIGHLY coloured flowers are doubly appreciated at this dull season of the year, and a specimen of *L. Gouldiana* is an object of beauty, of which the cultivator can well feel proud. The plant will succeed under the same conditions as *L. autumnalis*, from which it is supposed to be a natural hybrid. When in flower great care should be taken that no water is allowed to touch the flower, or decay will set in. I find no difficulty in cultivating this species with the above-mentioned one, only not being such a vigorous grower much less water will answer its requirements. The flowers are useful where buttonholes are a requirement, not being so large as *L. autumnalis*. The flowers, like those of the best forms of that variety, are of a deep rosy purple colour.

SOPHRO-CATTLEYA CALYPSO.

True bigeneric hybrids are, even at the present time, scarce, and the above mentioned is described by the late Professor Reichenbach as a gem, and is an acquisition to anyone fortunate enough to secure it. The plant is perhaps best described as a miniature *Loddigesi*, with pseudo-bulbs about 4 inches high; the flowers (fig. 3) are about 3 inches

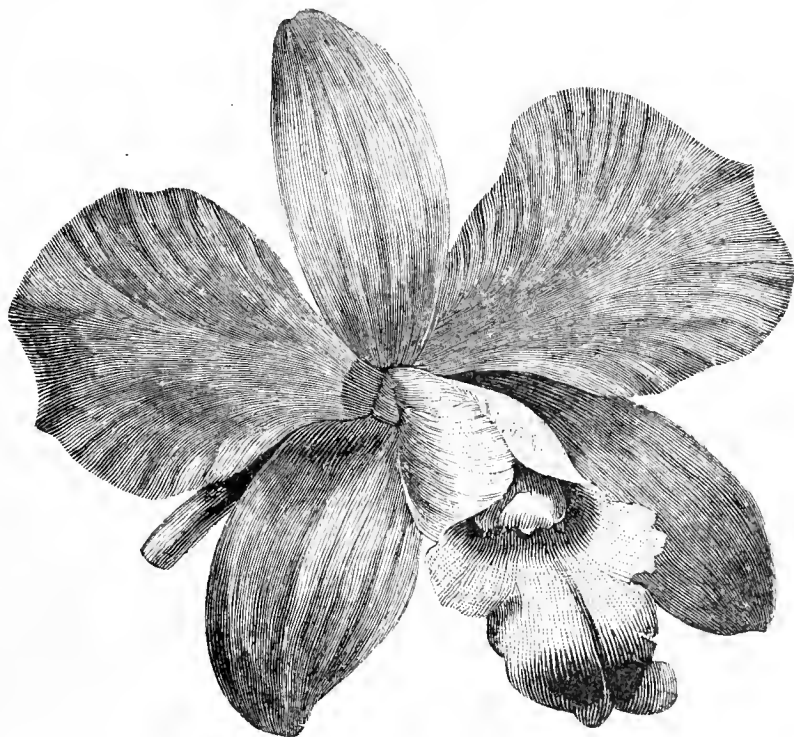


FIG. 3.—SOPHRO-CATTLEYA CALYPSO.

in diameter, petals broader than the sepals, of bright rose colour toned with scarlet, which has a wonderful effect on the whole flower. The lip is distinctly three-lobed, the side lobes roundish, convolute over the column, slightly reflexed towards the apex, pale lilac externally, and on the inner side creamy white bordered with amethyst purple at the anterior margin; middle lobe broadly oval, undulate at the margin, crimson purple; column white, stained with purple at the apex.

This plant was raised by Messrs. J. Veitch & Sons, and shown by them December 13th, 1892, when it received a F.C.C. I find it succeeds admirably in a cool intermediate house, under the same conditions as *Lælia præstans* as regards compost, but great care must be used in applying water while the young growths are in a green state, or they are apt to turn black and die. The parentage of this gem is *Sophranitis grandiflora* × *Cattleya Loddigesi*.

CYPRIPIEDUM EURYADES.

Another section of this most useful family, in which the hybridist has undoubtedly improved both parents, is the one in which *C. Lee-anum* and *C. Boxalli* comprise the parentage. The first record we have of this cross is in the year 1892, when Messrs. J. Veitch & Sons showed a plant and received an A.M. for a plant under the name of *C. Hera*; again, in the same year, the Chelsea firm showed *C. Adrastus*, followed by *C. Euryades* in 1896. It is to be expected from such a cross, and one parent a hybrid, that there will be a wide range both in colour and size in the progeny, and it is useless to describe one or the other.—J. BARKER, *Hessle*.

DENDROBIUM SPECTABILE.

THE treatment I find to suit this New Guinea species is quite different from that to which the Indian *Dendrobiums* are subjected. My

success with this and other species from that region is attributable to the fact that we never allow the plants to become dry, or permit violent fluctuations in the structure. On the contrary, we strive to maintain a moist genial atmosphere, the degree of warmth varying with the external conditions. From early in November until the end of February the plants are afforded all the light and sun possible, but during the remaining portion of the year shading is resorted to, or the plants will soon be disfigured and probably never recover. *D. spectabile* will not stand a cold, damp air; in foggy weather during November and December let there be sufficient warmth in the hot-water pipes to make the house feel quite comfortable on entering.

Anyone who grows the usual occupants of the stove to perfection (except *Crotons*, because the last named need all the sun we get) should be able to cultivate the beautiful species under notice hung near roof. If the structure is a span-roofed one, running east and west, hang the plants near the glass on the north side during the summer and remove them to the south side for the winter months. In potting the plants use very small Orchid pans, only just large enough to accommodate the roots. Employ the best Orchid peat fibre broken into small lumps about the size of Walnuts. We use only one layer with heads of live sphagnum between the lumps of peat. Let both pans and crocks be new, as these plants are very impatient of root disturbance. For these plants I have a most decided preference for square shallow teak baskets, as the roots will cling to the wood, and should the compost become sour or the crocks green and mouldy the roots may be picked out and the plants washed in tepid water. The crocks can then be renewed, also the peat and sphagnum with a few small crocks or charcoal intermixed, but not sand. It is most important to remember that the New Guinea Orchids cannot withstand cold draughts, and, therefore, should the sun be so bright as to run up the temperature too high, and there is a cold wind, only open the bottom ventilators on the lee side of the structure.

Strive to keep the sphagnum continually growing all the year round, as it forms an excellent guide as to watering. When the moss begins to look dry apply water 10° higher than the temperature of the houses. Some growers are under the impression that New Guinea Orchids must have a high temperature, but this, I think, an error that is likely to be followed by disastrous results. Our plants are kept at the present time in a night temperature of 60° to 65° , rising to 65° and 70° by day. This will run with sun heat to 85° or 90° , and must be accompanied by ample atmospheric moisture. *D. atrovioleaceum* thrives under precisely similar conditions. I hope to send notes on other species from Northern Australia, Queensland, and New Guinea for insertion in an early issue.—F. J. THORNE.

[We commend the above notes to the attention of all Orchid-loving readers of the *Journal of Horticulture*, as Mr. Thorne's success with what are usually considered "difficult" Orchids is remarkable. For some years the Sunningdale Park plants of *Epidendrum* (*Diacrium*) *bicornutum* and *Dendrobium atrovioleaceum*, to cite only two examples, have been the envy of many growers. And there can be small wonder at this, for where the majority of these plants merely exist, at Sunningdale they luxuriate. It is to be hoped that the cultural details given, with those promised for a future occasion, will be of material assistance to growers whose efforts have not hitherto been crowned with success.

On Christmas eve we had the pleasure of seeing Major Joicey's collection of Orchids, and the inspection was a most enjoyable one. Notwithstanding the heavy fogs that have been experienced of late and the exceptional fluctuations in the weather, there is a very beautiful display of flowers in several of the structures. *Dendrobium spectabile*, to which special prominence is given in the above communication, is represented by three plants all in good health, and one of which is producing the flowers that have received such attention during the past few weeks. Of *D. atrovioleaceum* there is a much larger stock, producing in all upwards of fifty spikes of flowers. Knowing this it need not be said that the plants are in splendid condition. Side by side with these is the chastely beautiful *D. Johnsoniæ* (*D. Macfarlanei*), the flowers of which are singularly attractive at this period of the year.

More brilliant in colour and entirely different in form are the blooms of *D. bigibbum*, which for Christmas time is absolutely essential to a complete display. Still further diversity is afforded by the more modest *D. aureum*, and the ever appreciated *D. phalaenopsis Schröderiana*, with its brightly coloured and abundant flowers.

Not that *Dendrobiums* form the sum and substance of the display. Such is by no means the case, for the *Calanthes* alone would make a show. There is not an immense number of plants, but each one carries splendid spikes of perfectly formed and well coloured flowers. One of the finest spikes had open on it at one time three dozen flowers, not, of course, counting the unexpanded buds at the apex. Then there are *Cymbidiums* rapidly developing, with many *Cypripediums* and *Lælias* in full beauty. Of the latter a richly coloured form of *autumnalis* and a plant of *L. a. Stella* were most conspicuous. Others, too, were there, but more cannot now be said of them or of the excellent health

of the hundreds of plants that are not at present adding to the glory of the display with their flowers, but which will in their turn do much to maintain the high repute in which Major Joicey's Orchids are held in the world of horticulture.]

LIVERPOOL NOTES.

AT ALLERTON BEECHES.

WHEN visiting the handsome residence of Henry Tate, jun., Esq., on a mid-December day I knew that I should see many choice Orchids in flower, for the collection is rich in good things, but my anticipations were more than verified at the bright array of flower which met my eyes. Splendid specimens of *Oncidium varicosum*, *Rogersi*, and *tigrinum*, *Lælia anceps* in variety, *Cypripediums* of the montanum section, *insigne*, *Chantini*, *albo-marginatum*, *punctatum violaceum*, *Leeanum*, all perfect in health and beautifully flowered, with *Lælia albida* and many others, were especially inviting. Curious and decidedly pretty was *Cypripedium insigne bisepala*, Tate's variety, a well flowered plant in which the sepals are arranged above and below, every flower being perfect in character. It was imported in what was apparently a clump of seedlings.

The cool house was a picture of healthy growth, several plants being in flower, whilst *Odontoglossums* *Chestertoni*, *Alexandrae*, *Andersonianum*, *radiatum*, and many others too numerous to mention, were developing massive spikes. The boat-shaped raft of the somewhat difficult *O. coronarium* brought vividly to mind what I had seen of it, and how much may be again expected. *Masdevallia Veitchi grandiflora* added colours all its own.

Orchid-hybridising has been carried out most extensively for many years, but as yet only few have opened to satisfy the patient watchers. However, there are sufficient to delight everyone, the variety from the same seed-pod being worthy of note. *Cypripediums* *Sirdar* and *Cromer*, from *Boxalli atratum* \times *nitens superbum*, are both very fine, but quite opposite in colour. *Cypripedium tenebrosus*, a grand flower of a rich purplish shade, looked regal; whilst *C. allertonense*, a fine, bold flower from *villosus* \times *bellatulum*, had the latter manifested in the dorsal sepal. More than a score of others were flowering for the first time, and the hundreds of seedlings raised by Mr. Osborne during the past five and a half years in which *Rothschildianum* crosses are abundant were in every stage of healthy growth, and showing for flower. Three dozen *Lælio-Cattleyas*, none of which have flowered, but the majority of which will do so next season, hang from the roof. What delights lay stored up in the vigorous stock! and how little the impatience of any human being could help forward their time of flowering!

The Orchids were not the only bright attraction, the warm conservatory being filled with a gorgeous display of *Poinsettias*, *Salvia splendens*, *Begonia Gloire de Lorraine*, *Azalea Deutche Perle*, the latter specially well grown, and other seasonable flowers. The stoves contained a selection of everything rich and good, the scrupulous cleanliness and vigorous appearance of everything being a tribute to Mr. C. Osborne and his staff, and an unfailing pleasure to Mr. Tate. Yet, with it all, a feeling of sadness must pervade many Liverpool people at the thought that Mr. Tate is soon about (owing to business) to remove to London.

AT ELMHURST, AIGBURTH.

There are several good collections of *Eucharis* in our neighbourhood, but none that commands greater attention than those grown by Mr. J. Harrison for Mrs. W. G. Bateson at Elmhurst, Aigburth. *Eucharis* form a specialty of Mrs. Bateson's, and she certainly has good reason to be proud of her splendid collection and the care evinced for their welfare by Mr. Harrison. The house in which they are growing is span-roofed, underneath the central stage being a tank of water, with 4-inch pipes running through. This moisture arising Mr. Harrison thinks the cardinal point as regards sound root action, the syringe playing its important part on the top growth, and I should be sorry to question the statement, for the twenty-four plants, in pots ranging from 12 to 22 inches, bore unmistakeable signs that the treatment was perfectly sound. Drainage is an essential point upon which Mr. Harrison insists, the pots being half filled, and the bulbs potted in good fibrous loam three parts, with charcoal and sand. Plenty of water in summer, but great care in winter is exercised. Soot-water gives the tone to the leaves, and the old-fashioned shading of flour made to the consistency of cream is still adhered to.

Mr. Harrison is no believer in periodical potting. The plants have this season been potted for the second time in thirteen years. The mite is unknown. Their flowering is somewhat late, but spikes developed and hundreds to follow must be a source of delight to Mrs. Bateson, and a deserved warranty for skill to the grower. *Pancratiums* are equally well done.

Fine indeed must be the plants likely to supersede the old *Pyrus japonica*, a splendidly berried plant, 30 feet by 18 feet high, growing against a stuccoed wall, being ornamental nine months out of twelve. It is altogether a fine and well-kept garden, and other notes may come in their season, for Mrs. Bateson loves her garden for all it is worth.—R. P. R.

EMIGRATION.

It is not often we receive two letters by the same post from gardeners ("D. G." and "H. C.") seeking advice as to their prospects of gaining a better living in distant lands, than they can obtain in their own country. No questions are so difficult to answer, because of the enormous differences in the health, strength, and capacities for perseverance of the men themselves. Some can adapt themselves to unforeseen circumstances much better than others, and one will forge his way through obstacles to which another would succumb.

Then there is the element of chance or luck—call it what you will—to exert an influence, as one man may meet with opportunities that another happens to miss; and again, one may make much better use of his chances than another. This is the case at home and abroad. That some men in the gardening ranks seem to have been the favourites of fortune none can deny; but all the same, we suspect that far more who enjoy comfortable homes, do so as the result of their own good judgment, industry, and perseverance. They worked as heartily in small gardens as in large, however low their wages, and thus established a character for competency and trustworthiness. Such men usually find opportunities for advancement; but though the waiting may be wearisome, they do not "throw themselves out" in a moment of haste or despair. They are men with a motto—"Do what is right, and never despair."

It is much the same at home and abroad, though longer hours of harder work is the rule over the water than in the old country. We deplore the plethora of thoroughly good, useful, and industrious gardeners, who find it hard to win in the battle of life; and we are not over-enchanted with the fashion of the times to further overburden the ranks by making more "on paper"—men or women—in colleges and schools. Some of these can scarcely fail to be other than dilettantes, and therefore destined to reap disappointment, of which, in fact, a foretaste is in certain cases already experienced.

As regards emigration, it is entirely speculative—at least in the absence of arrangement for employment at a given destination. We are glad to know of British gardeners who have done and are doing well in other lands, though perhaps as many have failed in the object of their hopes, though some of these have found employment in other callings, more or less to their satisfaction. Those who succeed in the States or Colonies write hopefully, a few glowingly; but those who do not have a different tale to tell, of which we can give an example in the following lines:—

"Come, boys, I have something to tell you;
Come near, I would whisper it low—
You are thinking of leaving the homestead—
Don't be in a hurry to go!

"You talk of the mines of Australia—
They're wealthy in gold without doubt;
But, ah! there is gold in the soil, boys,
If only you'll shovel it out.
The mercantile trade is a hazard,
The goods are first high and then low;
Better dig the old soil a while longer—
Don't be in a hurry to go!

"The great busy West has inducements,
And so has the busiest mart;
But wealth is not made in a day, boys—
Don't be in a hurry to start;
The bankers and brokers are wealthy,
They take in their thousands or so—
Ah! think of the frauds and deceptions—
Don't be in a hurry to go!

"Home soil is the safest and surest,
The orchards are loaded to-day,
You're as free as the air of the mountains,
And monarch of all you survey.
Better stay on that soil a while longer,
Though profits come in rather slow;
Remember, you've nothing to risk, boys—
Don't be in a hurry to go!"

We do not know whether or not those lines were written by one of the several men who have tried emigration, and found it wanting; then struggled their way back to the land of their birth, and made for themselves contented homes. The lines are not inserted for the purpose of dissuading the enterprising, but we should like to feel that the emigrant gardener who has "nothing to go to," has enough money to "keep" him in the new land for at least six months (and look well after it), with a reserve to pay his passage home again.

FRUIT TREES IN SOUTH AFRICA.—Fruit trees and shrubs, while well known and appreciated in South Africa, are not offered for sale, according to Consul-General Stowe of Cape Town. A representative of a United States nursery assured him that he sold more trees in a period of eight weeks than he could have sold in the United States in twenty-four weeks. Fruit of nearly every variety can be cultivated in South Africa, but the growers must, of course, be educated. As there are no frosts the insect enemies are very destructive, but these can be held in check by the same means employed in the United States. American fruit and ornamental trees, chemical preparations, spraying pumps, can be introduced into that country with profit.—("American Agriculturist.")

THE YOUNG GARDENERS' DOMAIN.

ALLAMANDAS.

AMONGST the many stove climbers, I think nothing looks more charming during the summer months trained over the roofs than Allamandas, with their glorious foliage, intermixed with magnificent yellow flowers. When properly grown they are of fairly easy culture, but like most stove climbers they require considerable attention during their growing season. With care Allamandas may be had in bloom four to five months during the summer. In many stoves they are planted in places built for the purpose, but they may also be grown in large pots with equally good results.

When the plants have to be restarted after their season of rest they should be pruned back to within three to four eyes of the last year's growth; this ought to be done just when the buds begin to swell, but potting should not be done for a fortnight after pruning. In the meanwhile, however, the soil can be prepared. The following mixture will suit them admirably:—Good fibrous loam three parts, peat two parts, with the addition of decayed cow manure one part and a sprinkling of coarse sand. When potting every care ought to be taken not to damage the young and tender roots. The pots must be clean and well drained, as during the growing season they require an abundance of water. As the growth extends more attention will be required in tying and stopping, until the grower thinks enough good growth has been made to furnish the roof. Plants growing in pots require more feeding than those in borders, therefore at every alternate watering a little liquid manure may be given, and will be found beneficial, both to the growth and the flowers.

The Allamanda is also one of the most telling plants in the exhibition tents, as we often see grand specimens shown by the leading growers. These are grown on balloons with treatment similar to that already advocated. The chief point is to get the growth well divided over the balloon so as to allow the flowers to lie on its foliage. The plants must be kept well up to the glass, but as the flowers begin to open they should be slightly shaded. Some persons prefer to hang paper over them, but I consider a slight coating of shading over the glass safe at this point. If required for showing purposes the plants should be gradually hardened by removing them into the greenhouse quite a fortnight before the date of exhibition, for if removed too soon they are apt to be injured, and soon lose their foliage and flowers.

During the growing period a moist atmosphere is essential, and they should be syringed twice a day, this not only being beneficial to the growth but also for keeping the stock free from any insect pests, of which I think thrips are the most troublesome; and if once this enemy gets established it cripples the foliage and growth very seriously. The next important point is the resting and drying off, which should take place in October, therefore water should be gradually withheld until the foliage is down, but the growth must not be allowed to shrivel, or much damage will accrue to the buds.

There are many varieties of Allamandas, including Hendersoni, nobilis, Schotti, and grandiflora. The latter I have found more delicate than the others, therefore I would recommend equal parts of peat and loam, with an extra quantity of coarse sand. Many growers, I understand, have discarded this grand variety owing to its delicate constitution, but I think when properly grown it surpasses all the others for indoor decoration. Yet one more useful variety can be added to the list—namely, Williamsi, which, of late, has been freely used for grouping.

It is now necessary to refer to propagation, and I will describe the system I have found most satisfactory. After the old plants have been cut back, potted, and young growth advanced, say 4 to 5 inches in length, take as many as are required with a heel of old wood, and insert the cuttings singly in small 60-pots. Place a small hand-light on a hotbed in which the cuttings may be plunged, and by keeping a fair amount of moisture over them they will root quickly. As soon, however, as roots have formed they should be taken out and kept well syringed, potting as they require it in very sandy soil. No doubt there are other methods of rooting stock, while the plants may also be grafted on nerifolia. I have only noticed one grafted plant, which is supposed to have been worked twenty-five years ago. Every season it flowers profusely. It is grown in a pot, and every February it is turned out, the ball reduced, and the roots cut well back with a sharp knife before repotting.—W. L., King's Weston.

A BOOK FOR THE HOME.—An excellent and useful little work is "Holloway's Almanack and Family Friend," and coming, as it does, from one who has done so much for education (as witness that magnificent Institution the Royal Holloway College, at Egham), it may be relied on as an acceptable gift. It is issued free of cost, but its enormous popularity is not due to that fact alone. A copy of the issue for 1900 is to hand. It is full of excellent pictures. Besides a mass of information, which makes the almanack useful as a reference book, it contains a series of illustrated articles on the old customs of many nations. Every copy also carries with it a railway insurance policy of £100 for the whole of the year 1900. The little book is sent free by Thomas Holloway (the proprietor of Holloway's pills and ointment), 78, New Oxford Street, to anyone who sends one half-penny stamp for postage.



HARDY FRUIT GARDEN.

Preparing Soil for Planting Fruit Trees.—Thorough and complete preparation of the soil should always precede the planting of fruit trees, especially choice varieties. It is, however, waste of time and space to plant other than the best varieties of any kind of fruit tree. Some of the best succeed, nevertheless, better than others. These must be noted by observation or inquiry in the neighbourhood, or varieties about which there are doubts may be tested by planting and growing a few before establishing many.

Whether planting a large plot or inserting only a single tree, deep working of the soil is essential. A square plot of ground intended for fruit ought to be prepared in the following manner:—First divide it into two equal parts. At the end of one of these divisions take out a trench two spits deep, and 2 feet wide. Wheel the soil thus taken out to the same end of the corresponding division. The first spit of the next trench ought also to be wheeled away. Break up the bottom of the first trench well, and add some decayed manure if the soil is very poor, as it most likely will be. The second spit of the second trench may then be turned over upon it, also the first spit of the third trench. This method admits of the layers of soil being retained in the same position as formerly, thus insuring that the best soil is not buried and the worst brought to the surface. The work proceeds in this manner to the other end of the first division, when the first spits of the next division are used to complete it.

Finally a finish can be made at the end where the soil is placed. Positions for isolated trees must be prepared by excavating a circle 6 to 8 feet in diameter. Throw out the two spits, break up the bottom, and return the soil. If planting is to be done immediately the ground should be firmed by treading, but this must be done before rain falls, or when the surface is quite dry.

Planting Fruit Trees.—Although autumn is the best time for planting, yet trees will succeed well if they are planted in the course of the following weeks in dry, mild weather. The holes for the reception of the roots must be prepared wide and shallow. The trees ought to have healthy fibrous roots, and these must be preserved from injury by not exposing them long out of the soil. If the trees are growing in nursery quarters which are handy to the site for planting they should not be lifted until the position for planting them is ready. When procured from a distance lay the trees in moist soil as soon as received, and should the roots have become very dry plunge in water to plump up the tissues. Prune away all damaged parts. In planting spread the roots out to their full extent, the best plan being to form a slight convex mound of soil and distribute the fibres over it, a layer at a time. Sprinkle fine soil over the roots from the stem outwards, so as to secure the placing of the fibres in one direction. The next layer may then be spread and treated in the same way, the uppermost roots being covered with 4 inches of soil. Stake standard trees at once to prevent strong winds disturbing the roots, and mulch with 3 inches of littery manure.

Pruning Pyramid and Bush Apples and Pears.—If the main branches are sufficiently wide apart so that there is no crowding in summer, the winter pruning will resolve itself into shortening back the side shoots to one or two of the lowest buds. Where, however, old spurs have extended to an undue length it will be advisable to gradually shorten them, or remove altogether a few clumps in order that the rest may be disposed more thinly, and thus receive in better measure the benefits of light and air. A mistake often made in the training of these forms of trees is originating too many branches. None should be nearer together than a foot, as the subsequent side growth duly shortened each summer and winter will occupy much of the intervening space.

Pruning Standard Fruit Trees.—The simplest and best manner of pruning standard trees is to thin out the branches where they are too thickly placed or interlace with one another. A few years of neglect in pruning will soon produce a quantity of unnecessary wood, but trees rightly managed from a young state do not need much annual pruning to maintain them in good condition. Shortening the branches is altogether bad practice, as it induces the formation of more wood, which crowds the trees. Removing branches entirely will not do so, provided growths that may issue from near the cut parts are promptly rubbed out the following spring.

Pruning and Training Morello Cherries.—The growths of Morello Cherries are slender, and fruit is best produced on the wood which was made the previous year. The young shoots are, as a rule, freely produced, therefore a selection of the best must be made when pruning and nailing in to walls or tying to trellises. Both wood buds and blossom buds are produced on the shoots, but it may happen that all the buds on a shoot will be blossom buds except the terminal bud. Such shoots must not be shortened, as wood growth beyond the fruit is essential to perfect the latter. As a rule, however, the basal buds on

fruiting shoots are wood buds, and from these will proceed the new growths the next season. It may be necessary to prune away the last season's fruiting shoots now, though this ought to have been done immediately the fruit was gathered. The best young growth available must take the place of this, disposing all not less than 3 inches apart equally over the trees. Shoots inconveniently long may be shortened, but it must be to a wood bud. A limited number of growths that are not wanted for laying in at full length may be shortened to form spurs.

FRUIT FORCING.

Cucumbers.—Young plants coming into bearing should not be over-cropped, and they will be assisted by removing staminate as well as superfluous pistillate flowers as they appear. Plants in bearing will require to be examined at least twice a week, removing all weakly and exhausted shoots, reserving as much of the young growths as there is room for them to expand their foliage, overcrowding tending greatly to disaster, inasmuch as it must end in denuding the plants of a large extent of foliage. Stop the shoots at one or two joints beyond the show of fruit, allowing young plants more freedom, yet keeping the trellis evenly covered without overcrowding. The temperature at night should be 65° to 70°, 70° to 75° by day artificially, with a rise of 10° or more from sun heat, admitting a little air at 80° if the external air be moderately warm and soft, but if cold and sharp it is better to allow the temperature to advance a little higher than admit too much dry cold air, even when the sun is powerful. Close early in the afternoon, so as to utilise the sun heat, a temperature of 90° to 100° from that source being beneficial rather than otherwise.

Root action will be encouraged by light top-dressings of turfy loam and sweetened horse droppings in equal parts, sprinkling a little of a mixture of superphosphate three parts, nitrate of potash (powdered) two parts, and soot five parts, mixed, over it occasionally. Water or liquid manure should be supplied as required, but avoid excessive supplies, and be moderate in damping down and syringing at this season. Sprinkling the floor and other surfaces in the morning and afternoon with light syringing on very fine days will be sufficient.

Where winter Cucumbers are not grown, or the supply from April forwards is obtained from frames, seeds should now be sown to raise stock for planting next month, either in houses or manure-heated pits or frames; the fermenting materials for the latter should now be in course of preparation for making up the beds. If no convenience exists for raising the plants a bed of fermenting materials should be made up forthwith, the seed to be sown as soon as the bed affords a suitable temperature of 70° to 75° top heat, and 85° to 90° bottom heat. Plants from this sowing will be suitable for house planting, also pits and frames, to afford a supply of fruit from about the middle of April through the summer.

Peaches and Nectarines.—*Earliest House.*—The trees started last month are advanced in blossoming. When the flowers are fully expanded the night temperature should be maintained at 50° to 55° in mild weather (5° less when the weather is severe), 55° by day as a maximum in severe weather by artificial means when the sky is overcast, 65° by day from sun heat, and if the air be mild a few degrees more may be allowed with free ventilation. Syringing the trees must cease when the blossoms show colour, but a genial atmosphere should be secured by damping the floor and border in the morning and early afternoon of bright days, having recourse to an occasional sprinkling of such surfaces only in dull weather. Ventilate freely when the external conditions are favourable, and when the pollen is ripe choose the warmest and driest part of the day, preferably before or within an hour of the sun passing the meridian, for aiding its distribution by shaking the trees or trellis, or taking a camel-hair brush or feather and gently applying the pollen to the stigmas. If there be a deficiency of pollen of any variety it may be taken from those that afford it plentifully and applied to the stigmas of the flowers sparsely furnished with that essential of fertilisation and securing of a good set of fruit. The inside border must not be neglected for water, but avoid making the soil sodden by needless applications, especially of liquid manure, and afford sufficient protection to the outside border for the exclusion of frost.

Second Early House.—This is the first in most establishments being planted with trees of Hale's Early, Stirling Castle, Royal George, or Dymond Peaches, Rivers' Early, Lord Napier, Elruge, or Humboldt Nectarines to afford ripe fruit at the end of May or early in June, and should now be started. Damp the trees and house two or three times a day, but the former must be allowed to become fairly dry before nightfall, and in dull weather the syringing should be omitted, or had recourse to occasionally only. Turn the heat on in the morning so as to secure 50° through the day, ventilating at that temperature and allowing it to rise from sun heat to 65° with free ventilation. Sufficient fire heat at night to maintain a temperature of 40° to 45° will bring the trees on quite fast enough. The inside borders must be brought into a thoroughly moist state by repeated waterings if necessary, but where the roof-lights have been removed water will not be required until the fruit is set and swelling freely. The outside border should be protected with litter, a covering not to heat but to prevent chill from snow and the soil being frozen.

Later Houses.—These should be put in order forthwith, and if any trees are swelling their buds more rapidly than is desired, a covering of mats over the lights will prevent the temperature being raised by

sun heat to a great extent, and the flowering will be retarded considerably. Where the roof-lights have been removed the buds are as yet quite dormant, and the lights may remain off until the time arrives for starting the trees, or in case of late houses until the buds commence swelling. Pruning may then be effected and the lights replaced, which will not be required until the end of February, or later.

THE BEE-KEEPER.

CHANGING THE ASPECT OF HIVES.

WITH the opening of another year, whilst all is quiet in the apiary, steps should be taken to change the aspect of the hives where it is considered necessary to do so. It is a matter of opinion which is the best position for the hives to occupy. If it was a matter of choice we should prefer a south-west aspect to any other; but as we have stated in previous notes, there is really little difference in the amount of honey stored in hives placed in various aspects.

It is doubtless an advantage if the bees commence working early in the morning. This is to be observed more particularly during the early spring months when breeding is going on apace. The bees will then leave their hives much more readily if the sun strikes directly on them than if they are shaded.

As bearing on this question we may mention a fact that came under our notice. On Sunday the 24th ult. the sun was shining brightly for three hours during the middle of the day. The temperature was only a few degrees above freezing, but from all the hives placed in a south-west position the bees were taking a welcome flight reminding one of spring. There being little snow on the ground at that date the majority of the bees returned safely to their hives.

If bees have to be removed several miles by road or rail it will be an advantage to delay the operation till spring, as at this season, whilst the temperature is low, the bees are in a state of stupor, and are closely clustered in the middle of the hive. The jolting in a cart, however carefully they may be packed, will cause many of the bees on the outside of the cluster to fall on to the floor board, where they will soon become chilled, and be unable to return to the cluster.

STANDS FOR HIVES.

Before arranging the stands for the hives it will be an advantage to bear in mind the convenience of working the various colonies during the busy season, as much will depend on the careful manipulation of the bees whether success or failure has to be chronicled after another year's experience. One of the greatest mistakes that is made when hives are being placed in the position they are to occupy is to place them close to a wall or fence, so that it is impossible to get at the back of the hive whilst manipulating. Bee-keepers who are interested in their bees and know how to handle them will not make this mistake. When the majority of the bees in the country were kept in straw skeps it was the usual practice to place them on stands, as near a wall or fence as possible. It did not then matter much, as they were not interfered with more than twice a year. This was in the spring, when the new swarms were placed in the skep; and autumn, when they were lifted, to be placed over the sulphur pit.

Happily this is now all altered. Old customs, however, die hard, as at the present time we know one bee-keeper of the old school who has about twenty stocks placed in a double row on a stand close to a wall. All manipulating has to be done from the front of the hives, and anyone who has had experience in a similar case will appreciate the difficulty of handling bees in such a position. Hives on legs about 18 inches in height are very convenient. But where hives are home made a stand composed of two 7-inch boards answers the purpose admirably. Stout posts should be driven into the ground about 4 feet apart. If some pieces are placed across each pair of posts, which should be kept level lengthways, but allowed to face 1 inch to the front, this will allow the moisture to drain off the alighting board. From the alighting board to the ground should not be more than 18 inches, and if a hive is placed over each pair of posts there will be ample room between them. There should be at least 3 feet of space at the back of the hives. The bees may then be manipulated with pleasure.—AN ENGLISH BEE-KEEPER.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. — *Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY. — *Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND. — *Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea. — *Seeds*.

H. Cannell & Sons, Swanley. — *Seeds*.

Cooper, Taber & Co., Ltd., 90, Southwark Street, London. — *Wholesale Seed List*.

R. Crossling, Penarth. — *Seeds*.

W. Cutbush & Sons, Highgate. — *Seeds*.

A. Dickson & Sons, Newtownards, co. Down. — *Fruit Trees, Shrubs, and Plants*.

Dicksons, Ltd., Chester. — *Seeds*.

Dobbie & Co., Rothesay, N.B. — *Competitors' Guide*.

H. Eckford, Wem, Salop. — *Seeds*.

Kent & Brydon, Darlington. — *Seeds*.

T. Methven & Sons, Prince's Street, Edinburgh. — *Seeds*.

The French Provence Seed Growing Establishment, Nîmes. — *Seeds*.

J. Peed & Son, West Norwood. — *Seeds*.

Pope & Sons, King's Norton, Birmingham. — *Seeds*.

C. Sharpe & Co., Ltd., Sleaford. — *Seeds*.

B. S. Williams & Son, Upper Holloway. — *Seeds*.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Exhibiting Plants (E. N.).—Many times have we requested that a completed schedule be sent with any inquiries on doubtful points of interpretation of any particular class. With nothing before us but the three lines sent, we can only say that no one knows whether you would be disqualified or not. If the literal interpretation of the class were followed you would be, but the judges may have authority for taking a broader view, and their decisions accepted as final. We cannot in the absence of a schedule containing rules and regulations give a more definite reply.

Liming Rose Beds (Kittie).—Soil that has got sour by constant manuring and very little digging would be greatly benefited by a dressing of lime. The lime is best air-slaked—that is, placed in a shed until it has fallen to a fine powder, due to the quicklime absorbing moisture from the atmosphere. Such is milder than water-slaked lime, though if inconvenient to wait for air-slaking, the freshly burned lime may be sprinkled with water, using no more than is necessary to cause the lumps to fall into an apparently dry flour-like condition, and when cool apply to the soil at the rate of half a hundredweight per rod. It is best to apply the lime, during fair weather, in the autumn, and leave it on the surface for a time before digging in, especially when water-slaked, in order that it may part with some of its causticity. Air-slaked lime, however, may be dug in at once. The next best time is in March, as the ground will then have become more or less dried, and in free working condition. For Rose beds that have been long manured we have found a mixture of best air-slaked chalk lime and fresh soot in equal parts by measure, mixed, and applied at the rate of half a pound per square yard as soon after the middle of February as the ground is in good working order, at once digging in with a fork, taking small spits, give excellent results in the growth and flowers of the Roses. The mixture need only be dug in 4 to 6 inches deep.

Raising Tomatoes (T. W. L.).—Tomato seeds may now be sown to raise plants for affording ripe fruit early in May. The seed should be sown thinly in well drained pots, pans, or shallow boxes, using light sandy soil, and placing on a brisk hotbed to germinate. Raise the seedlings well up to the light before they become in the least drawn, thinning so as to secure sturdy plants, and when well into rough leaf pot off singly into thumb (2½ inch) pots, sinking them to the seed leaves. Shade until the potting is recovered, then expose to all the light possible.

Amaryllises (J. V. C.).—Amaryllises should be potted firmly in rather sandy yet turfy loam, with a little crushed charcoal intermixed, in spring, about February if they can be placed in a genial temperature of 55° to 60°, and they start all the better if the pots are plunged in a bottom heat of about 80°. Care is needed against giving too much water at first, and before there is any growth to appropriate it. As the flower spikes grow and leaves form more water is requisite. After flowering a strong leaf growth should be encouraged in the full sun, never allowing any check through drought at their roots. About the middle of August the water supply must be reduced, and a dry atmosphere should be maintained, with free ventilation to assist the ripening process.

Winter Condition of Black Fly (Amateur).—The black aphid (*A. cerasi*) lives through the winter on the young growths of Cherry trees under favourable climatic conditions, or in glass houses, and sometimes in warm situations outdoors. These continue to increase parthenogenetically under such circumstances for a number of years. This process of reproduction by gemmation or budding is distinct from that by eggs. These eggs consist of the outer wall or vitelline membrane, which is practically weather-proof, the yolk or vitellus, the germ vesicle, and germ spot. All these parts are easily determined anatomically, but it is extremely difficult to refer the egg under examination to the species. The eggs (true) are produced by winged females at the end of the summer or in autumn, generally pale or yellow at first, but ultimately turning black.

Hampshire Soil (A Fellow of Botany).—1, The best manure to apply to garden soil, where the ground is full of flints and where chalk abounds, is half-rotted farmyard horse stable manure. The manure from cows is also excellent when not less than half-rotted. All kinds of vegetable crops thrive on chalky soils thus enriched, it being only a question of cultivation to make the soil grow anything that may be required by an establishment. We do not consider it would be wise to screen the flints, and it would suffice to remove such as interfere with the working of the land. It would be advisable to bring in as much fresh soil as you can, so as to deepen it. 2, Orchard trees that are full of moss and short of wood growths should be sprayed with a solution of caustic soda and potash, ½ lb. each to six gallons of water, choosing a dry day, when the weather is mild and the trees quite dormant. It is more effectual when used at a temperature of 130°, or dust the trees with quicklime whilst damp after fog or rain. If the trees require pruning, attend to this before spraying or liming them, a judicious thinning of the branches or twigs where crowded being of great benefit in cases of stunted growth. To the grass or land we should give a good dressing of manure, not less than 20 tons per acre, and the sooner the better. 3, The wall trees should be pruned if they are worth it; if not, uproot them and plant fresh ones, for trees destitute of health often take more "doctoring" than they are worth. If kept they will probably require manuring and dressing with an insecticide. If you cannot procure farmyard or stable manure apply some approved fertiliser, such as those advertised for fruit trees in our columns. 4, Peach trees have thriven with us on a soil full of flints and where chalk abounds, the silica being too insoluble to do them the least harm. What they suffer from is dryness, and that can be obviated by watering and mulching with manure in summer. 5, Peach and Vine borders of the very best are made from pastures of such land, using the top 2 or 3 inches with the turf. Such a medium is better than Surrey loam for Peach and Vine borders. 6, The best fuel for boiler furnaces is anthracite coal where the draught is good, but in some localities coke can be had readily, and then it may be the more economical. 7, Water obtained from wells on lime formations is injurious to peat-loving plants, and also prejudicial to fruits for syringing purposes, and should be treated with anti-calcaire before being used for such purpose. 8, Rhododendrons could be made to thrive by preparing beds for them of peat or other vegetable material, such as limeless turfy loam mixed with half leaf mould, and mulching with cow manure. 9, Herbaceous plants of nearly every kind succeed on such soil as you describe if the borders are properly made, adding pure soil and some manure where the material staple is shallow and loose. 10, The hardier Tea-scented Roses and the Hybrid Perpetuals would unquestionably thrive under proper treatment and due preparation of the beds. The question of hardiness would be influenced by the altitude and exposure as regards the Teas, though they would succeed with protection in severe weather. 11, The soil is suitable for Figs, but whether they would succeed as standards depends upon the situation; they only answer as such in favoured positions. If you mean growing them against walls, if these are high enough there is no doubt of their succeeding on a south aspect if the trees are properly managed. You may rely on the information we give. Success is a question of intelligent routine.

Fresh Blood Mixed with Turfy Loam and Farmyard Manure for Top-dressing Vine Border (M. R. D.).—Blood is an excellent manure for Vines, but you would have done better by mixing with it an equal quantity by measure of wood ashes before adding to the twelve barrowloads of turfy loam and three barrowfuls of farmyard manure, then mixing the whole together. As you have not done this, and may not be able to procure the wood ashes, add to the compost the same amount of air-slaked lime, sprinkling it all over the heap, and turning at least once so as to incorporate all well together. After placing the compost on the border, it would be well to sprinkle on each square yard a handful of a mixture of three parts steamed bone-meal, two parts muriate of potash, and one part sulphate of magnesia, leaving on the surface for the water given in watering to wash in. We do not approve of raw blood being applied to Vine borders. It ought to have been composted at least three months before use; but with the treatment advised you may use it after mixing.

Dressing Vines with Caustic Soda and Commercial Potash Wash (R. A. C.).—The article may be procured of or through a chemist or horticultural sundriesman. The caustic soda (98 per cent. purity) and commercial potash or carbonate of potash, commonly called pearlash, should be used in equal proportions, say 1 oz. each to 1½ gallon water, dissolving in hot water and applying with a half-worn, clean, painter's sash brush at a temperature of about 130°, reaching well into the holes and crevices, but not using lavishly. It should be applied whilst the Vines are quite dormant. For the Figs it must be more highly diluted or to two gallons, as it sometimes injures the young wood, and for them it is better to use soluble petroleum, applying according to the instructions, as there are various strengths of the article. The other articles you mention are not insecticides for applying to the stems of Vines or trees, but valuable fertilisers for applying to the soil. If you fail in procuring the caustic materials send us a stamped directed envelope repeating your request.

Sulphuring Vinery (F. C. C.).—The practice of burning sulphur in vineries when the Vines are at rest is practised by some growers of Grapes for marketing, but, so far as we have observed, with little, if any, effect, for the Vines were infested with red spider the following summer. This pest harbours in various parts of the house—the wood-work, walls, and borders, cracks and crevices, and the sulphurous fumes fail to reach all the hibernating pests, and at any rate they wake up lively enough when the time for action comes. Thorough cleanliness is the best preventive, the woodwork being thoroughly brushed and washed with carbolic soap water; the glass cleansed inside and outside with clear water; the walls limewashed, and the loose surface soil of the border removed, and a top-dressing given of good turfy loam with a fourth of well decayed manure added; also sprinkling on each square yard a good handful—about 4 ozs.—of a mixture of three parts dissolved bones, two parts sulphate of potash, and one part sulphate of magnesia, well mixed. The top-dressing should not exceed 2 inches in thickness. Red spider also hibernates on the Vines, beneath the loose bark, and in the holes and crevices of the roots; hence we advise their being dressed with a solution of caustic soda (98 per cent. purity) and commercial potash or pearlash, 1 oz. each to 1½ gallon of water, applying with a brush at a temperature of 130° to 140°. This will kill the eggs as well as the larvæ and adults of most pests infesting vegetation. We do not advise the sulphuring, though if you like to try it a good handful of sulphur would be sufficient for the size of house you name.

Planting Vine against an Outside Wall (Amateur).—You may take up, plant, and prune the Vine at once, preserving as many roots as possible, not letting them get dry during the process of removal. Dig out a deep trench as far from the stem as you can, going quite below the roots; then fork away the soil from the roots into the trench, throwing it back with a shovel as the work proceeds, and in this way the roots will be kept clear of the soil, and the greatest number secured. If the soil in your garden grows fruit trees well, a Vine will grow in it also; but you cannot err by placing in a foot in depth of turfy loam for the roots to be spread on, and covering them with some of the same kind 4 or 5 inches deep. They must be spread out quite straight, cutting off all broken ends and bruised portions, working the soil well round them and pressing it down moderately firm, but not treading it hard. When finished the surface may be 4 or 5 inches above the level of the surrounding ground. A layer of longish manure spread on to exclude frost will complete the work of planting. The pruning should be severe, cutting off all the side or lateral growths—that is, those made during the present year, leaving only about two eyes or buds of each next to the main rods; or, if preferred, the main rods may be cut down to any desired extent, and young growths retained towards the base for training, if in this way, the wall space would be more effectively occupied. The main branches on Vines on walls should be 3 feet apart, so as to afford space for securing the fruit-bearing laterals between them, taking off their points so as to leave one leaf beyond the bunches. These side growths should be 18 inches apart, more rather than less, selecting the best as soon as bunches are visible, and pulling off the others gradually, allowing none to remain after those desired are secured to the wall. If the thinning is completed at once some of those intended to be retained may be broken in bending them to the wall, hence the wisdom of having a few in reserve. Lead-coloured paint should be well rubbed into the wounds after pruning.

Evergreens and Deciduous Shrubs for a Town Churchyard (T. S.).—Box, Yew, and Aucuba japonica are the best evergreens to stand the smoke of towns; Lilacs, Snowberry plants, Laburnums, Gueldres Roses, and common Honeysuckle the best flowering deciduous shrubs. If the ground is hard it ought to be trenched two spits deep, as the plants ought to be planted before the first half of March is out. The place should be kept as clean from weeds, and as regularly attended to, as a gentleman's garden, till the plants are big enough to almost meet.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (W. B.).—Early Red Calville. (C. N.).—1, Wyken Pippin; 2, Court Pendu Plat; 3, Dutch Mignonne; 4, D'Arcy Spice. (E. T.).—1, Wellington (Normanton Wonder); 2, Ribston Pippin; 3, Beauty of Hants; 4, Newton Wonder; 5, Roundway Magnum Bonum; 6, Warner's King. (C. B.).—1, Bramley's Seedling; 2, Dr. Harvey; 3, Blenheim Pippin; 4, Cox's Orange Pippin.

Names of Plants.—We only undertake to name species of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (X. Y. Z.).—1, Lnculia gratissima; 2, Justicia carnea; 3, Paper White Narcissus. (L. R.).—1, Pteris longifolia; 2, Woodwardia radicans; 3, Davallia canariensis; 4, Asplenium viviparum; 5, Adiantum cuneatum grandiceps; 6, Asparagus plumosus nanus; the latter is not a Fern as you suppose. (Evergreen).—1, Taxus baccata; 2, Ligustrum ovalifolium (the Oval leaved Privet); 3, Thuiopsis dolabrata; 4, Cupressus Lawsoniana, seedling form; 5, Thuia Lobbi; 6, Retinospora ericoides. (F. O.).—Crotons come within the category of florists' flowers and can only be named by comparison in a large collection.

COVENT GARDEN MARKET.—JANUARY 3RD.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case	4 0	to 15 0
" Canadian, barrel ...	10 0	15 0	Melons each	0 6	1 6
" Nova Scotian, barrel	10 0	17 0	Oranges, per case ...	5 0	15 0
Cobnuts per 100 lb. ...	60 0	70 0	" Tangierine, box...	0 6	1 9
Grapes, black	0 6	3 0	Pears, Californian, case...	6 0	9 0
" Muscat... ..	1 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	3 0	to 4 0	Herbs, bunch	0 2	to 0 0
Asparagus, green, bundle	5 0	6 0	Leeks, bunch	0 3	0 0
" giant, bundle	15 0	20 0	Lettuce, doz.	1 6	2 0
Beans, Jersey, per lb. ...	1 0	1 6	Mushrooms, lb.	0 6	0 9
" French Kidney, lb.	0 10	0 0	Mustard and Cress, punnet	0 2	0 0
" Madeira, basket ...	3 0	4 0	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz.	0 6	0 0	Parsley, doz. bunches ...	2 0	4 0
Brussels Sprouts, ½ sieve...	2 0	3 0	Potatoes, cwt.	2 0	5 0
Cabbages, per tally ...	7 0	0 0	" Teneriffe, cwt.	18 0	28 0
Carrots, per doz.	2 0	3 0	Seakale, doz. baskets ...	12 0	15 0
Cauliflowers, doz.	3 0	5 0	Shallots, lb.	0 3	0 0
Celery, per bundle	1 0	1 3	Spinach, per bushel...	5 0	7 0
Cucumbers, doz.	4 0	8 0	Tomatoes, per doz. lbs. ...	2 0	5 0
Endive, doz.	2 6	0 0	Turnips, bunch... ..	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Maidenhair Fern, doz. bnch	6 0	to 8 0
Arums	12 0	18 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch...	2 0	2 6	" Yellow, doz. bnchs.	6 0	9 0
Carnations, 12 blooms ...	2 6	3 6	Mimosa, per bunch	2 6	3 6
Cattleyas, per doz.	12 0	24 0	Mignonette, doz. bunches	6 0	8 0
Christmas Roses, doz. ...	1 6	2 6	Narcissus, white, doz. bun.	2 6	6 0
Chrysanthemums, white			" Yellow, doz. bunches	3 0	5 0
doz. blooms	6 0	9 0	" double, doz. bunches	2 6	4 6
" yellow doz. blooms	5 0	8 0	Odontoglossums	5 0	7 6
" bunches var.	0 6	1 6	Pelargoniums, doz. bnchs	8 0	12 0
Eucharis, doz.	6 0	8 0	Poinsettias, doz.	15 0	24 0
Gardenias, doz.	6 0	8 0	Roses (indoor), doz.	6 0	8 0
Geranium, scarlet, doz.			" Red, doz.	6 0	8 0
bnchs.	9 0	12 0	" Safrano, packet	2 0	3 0
Lilac, white, bundle ...	6 0	8 0	" Tea, white, doz. ...	3 6	6 0
Lilium Harrisii, 12 blooms	12 0	18 0	" Yellow, doz. (Perles)	5 0	7 6
" lancifolium album ...	3 6	4 6	Smilax, bunch	5 0	7 6
" rubrum	3 6	4 6	Violets, Parma, bunch ...	8 0	10 0
" longiflorum, 12 blooms	8 0	12 0	" dark, French, doz.	4 0	5 0
Lily of the Valley, 12 bun.	18 0	24 0	" English, doz.	3 6	4 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, per doz.	6 0	12 0	Hyacinths, Roman, per pot	1 6	3 6
Crotons, doz.	18 0	30 0	Lycopodiums, doz.	3 0	6 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	10 0	18 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz.	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	36 0
Ferns, var., doz.	4 0	18 0	Solanums, per doz.	9 0	18 0



A BOON TO MARSHLAND.

MOST educated people have a fair workable knowledge of geography—or at any rate they think they have—but it really is wonderful how often we can be caught tripping. We do not learn everything at school, and there are many parts of dear old England (divisions we might say) the names of which are totally unknown to us. We remember years ago how a batch of boys and girls were "floored" at the examination of the Cambridge Local by the request to place Ludlow and point out the Doldrums.

We fancy we know all the shires of England by heart, but have many south country people heard of Hallamshire and Howdenshire with Marshland and the Isle of Axholme? We believe Sheffield is the capital of Hallamshire, and in days gone by there was a horse fair held in Howden, second only to Lincoln. Howden was in the heart of a really good coach-horse breeding district, and you would see there the élite of London buyers. Howden is not what it was; the demand for coach horses of the old type does not exist, and although at Howden you may find many a real good Irish hunter, and may be English ones too, Howden may write Ichabod above its gates. Where is Howden? Sail up the Humber, noting with interest the rich tracts of land on either side, pass the point where the Trent pours its large volume of water into the estuary, and finding yourself in the Ouse travel up as far as Howden Dyke or Booth Ferry. Then you have the port of Goole on one side and Howden on the northern bank. In old days the traffic across Howden Dyke and Booth Ferry was enormous. You may see at Booth Ferry still a gigantic old house, once the inn, with its ranges of stabling and ample accommodation for man and beast. Now it is turned into a farm house. No need for the hostelry now. The N.E. Railway has done away with the coaches, and the big weekly markets have superseded the fairs. Goole is comparatively a modern port; we have watched it grow, and its vigour is such that we can put no limit on its capabilities. It is the centre of a purely agricultural district situate on a wonderful waterway; in leed,

what the farmers and inhabitants would do without that waterway one cannot imagine.

Marshland is a low-lying district not attractive to the eye of the lover of the picturesque. We are wrong perhaps. The rivers have charms of their own, and the high banks with the path atop is at least novel and interesting. We have seen some wonderful set effects there; but, better still, we have seen some marvellous crops. The land has all been subjected to that peculiar kind of tilling known as warping—i.e., the rich, muddy river is allowed to overflow certain fields, and leaves on them much alluvial deposit. The result is astonishing.

There are many things that must be seen to be believed. No Marshland dweller could grasp the idea of the beauties of forest scenery. No stranger could fathom the loneliness and isolation of a dwelling on Exmoor or Dartmoor. Some of the high wolds of Yorkshire and Lincolnshire bid fair to equal the moors in point of solitude. No one unless he has ridden after hounds knows the depth of a Holderness drain nor the strength of a Leicestershire ox fence, and no pen of ours can describe the mud of Marshland.

Reclaimed as it has been bit by bit, carefully drained, carefully banked, it needs something less than a shower to make the roads well nigh impassable. At the side of every road you will notice a line of single flag stones. Without that permanent pathway pedestrians could not stir a step. This flagged causeway was originally intended for strings of pack horses, which have vanished, as many other things have done. Here are several villages quite ten miles from a station, and a ten miles of appalling road. When it is considered that every ton of Potatoes—and many a thousand pounds' worth are grown there—every quarter of Wheat, and every ounce of tillage has to be laboriously drawn in heavy waggons by horses the whole ten miles, the work and labour and wear and tear must be something awful. A man with a pair of horses can only deliver one load a day, and then has well earned his wages.

Some of the bye lanes are simply quagmires, down which it is all six horses can do to draw a load of Potatoes. The expense of making these bye roads decent would be incredible. There is no foundation whatever, and any stones put on would only share the fate of those thrown into Bunyan's Slough of Despond; they would simply disappear and leave no trace. We cannot say a great deal in favour of the main roads, although the rates are tremendously high and qualified men are employed freely. As in manufacturing towns they say you cannot make money without making muck, so you cannot have rich alluvial soil in conjunction with good highways. This is as it used to be up to this year of grace, and now a wondrous change has come over the face of Marshland.

This autumn has seen the inauguration of a light railway, and the boon it is conferring on the agriculturists is simply unspeakable. It has been wisely planned, and taps the most congested district. It will simply revolutionise the working time table. We wonder what the horses would say if they could speak; we know what the men say. No more long hard days to Goole or Keadby stations; days when there is so little to show for wear and tear to man and beast; days that are apt to take off all the gilt from the farmer's gingerbread. This is one of the best districts where the experiment could be made. We are speaking just of the beginning of the scheme. The Isle of Axholme is to have a line, and other outlying townships of Marshland, such as Garthorpe and Luddington, are to be touched by another branch.

Whether this opening out of Marshland will have any effect on the Flax-growing industry we are hardly in a position to say. There used to be a time, when we were in our youth, that we saw field after field of the bright blue flower. One would almost think that, with plant erected at Goole, this industry might be worked again on a co-operative scheme; but there are wise men in Marshland, and enterprising men, so if there is anything in it they will soon know.

There are two other isolated districts where a similar scheme of light railways is about to be tried. There are some isolated villages in North Holderness which have suffered long from their isolation.

We once had the privilege of conveying all the produce of a 600-acre farm ten miles to the nearest station, and carting back every atom of artificial manure and cake. Now that required some horse power.

There is another district in South Yorks and North Notts, just on the confines of a teeming population, and yet without any means of transport but carts and horses; a market in view, but difficult of access. The railway is only a question of time. Let us hope the promoters will make all possible speed in getting the thing into working order.

WORK ON THE FARM.

We are once again commencing the work of the new year and trust that it may be got through in a satisfactory manner. Work on arable farms generally is likely to be much less formidable in itself during the next four years, as the series of good fallowing seasons we have just passed through should have left no legacy of twitch behind them. It is a good thing that work is likely to be light, for the labour difficulty is more severe than ever.

The calling out of the reserves, militia and volunteers, has strained to an extreme an already tight labour market. An ironmaster told us a week ago that he wanted 100 more men and could not get any. A state of affairs like this is sure to further drain the resources of the villages.

We have had frost, then a decided thaw with heavy rain, and now a sharp frost again, with no snow protection for the roots, which are likely to suffer, as they never looked like standing much frost, for though small they have grown very much out of the ground.

Ploughing is well forward, so that a stoppage will be of little account, and muck leading will soon be finished. Many farmers are again threshing freely, in some cases perhaps in order to find employment for the hands, in others to get the work done whilst the horses are unemployed and the ploughmen can be made use of in the stack-yard, for extra hands can hardly be obtained. It is a long time since the casual labourer has had such regular employment.

The grain markets, unlike those of fat cattle, have been very dull, and are likely to be so, for no doubt the high bank rate has caused a certain amount of unloading of stocks in warehouse, so those who can keep their holdings until summer may reap much advantage. Of course new political developments might cause an earlier reaction.

EXPORTATION OF STOCK.—The exportation of live stock for breeding and other purposes from this country goes steadily on at all times. During the present year such stock amounted to the value of £828,422. This, we learn, includes horses, many of which are exported not for breeding but working purposes, as well as racing. Their total value amounted to £622,110.

ROOTS FOR PIGS.—In some Danish experiments to determine the value of Turnips and Mangold Wurtzels as feed for hogs, it was shown that these roots may be fed as a part of a pig's ration with satisfactory results. The feeding value of roots was shown to correspond, says a contemporary, very nearly with their dry matter content. Roots rich in sugar produced better results than those light in sugar. The increase in live weight, however, followed more closely the dry matter content than the sugar of the roots. The hogs were fed a ration which contained three-fourths grain and one-fourth roots. In addition, the pigs received buttermilk, skim milk, and whey, either alone or mixed.

OLD TIMES.—There are many grey-headed farmers who remember the good old days of single ploughs, land planting, grain cradles, and threshing floors and flails, when it was necessary to get out of bed before daybreak, feed the cows and teams so as to be at work by the time it was light enough to see; to work until the dinner horn sounded, feed and water the team, eat dinner and return to the field and work until dark, after which feeding, and chopping wood occupied the time until nine o'clock, when all hands would hurry to bed, hurry to sleep, and be ready for the early crowing of the cock, and to repeat the programme six days in every week, unless it rained, in which case the time was spent over some labour that could be performed under cover. Farmers in those days were, or seemed to be, contented and happy, simply because they had enough to live on and no debts to pay. Now, we can do our ploughing while riding on a spring seat, and under an umbrella if we so desire; plant 10 acres a day instead of two; have all our grain cut in a day, and threshed during the forenoon. All our work may be done with time-saving and labour-saving machines, but we cannot help grumbling more than our fathers did when working from twelve to fourteen hours a day. Labour-saving inventions and improved processes are of little use unless they really save labour. Labour was inflicted on man as a curse, and in the present and past conditions of society became a necessity. But, like convicts in prison, our punishment is being relaxed on account of good behaviour, though we may never regain the lost liberty to live without labour. Let us make the most of our opportunities by spending the difference between the old hours of labour and the new in self-improvement and wholesome recreation, otherwise we are none the better for modern improvements.—("Rural World.")

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Journal of Horticulture.

THURSDAY, JANUARY 11, 1900.

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PALMS IN WINTER.

THE culture of the many species and varieties of these indispensable plants is a decidedly interesting branch of horticulture, for although we do not see such quick returns in the shape of growth as with many other plants and crops, yet all true cultivators delight to watch the gradual development of clean healthy fronds as the plants respond to good treatment. The depth of winter is a pleasant time to those who spend the greater part of their working hours in Palm houses, for there the temperature is warm and enjoyable, in marked contrast to the biting cold without. I often look back with pleasure to the autumn and winter months which I once spent in the Palm houses of a great metropolitan nursery, and the memory has just brought to my mind the idea that a few notes on Palm management might prove useful to Journal readers at the present time.

The regulation of heat and moisture is a matter of importance in Palm growing, and when a house is devoted entirely to such plants it is easy matter for an intelligent and attentive man to maintain ideal conditions. In private establishments gardeners often have to grow their large specimens among miscellaneous collections of plants, and under such conditions I often wonder that they are kept in as good health as they are, although they may lack that pleasing "gloss," which expert Palm growers know how to secure.

Unlike so many other plants, Palms do not seem to be dependent on sunshine to make satisfactory progress. Of course during bright weather they, as a rule, grow more quickly than when the days are dull and dark, but with sufficient heat and moisture round them they may always be depended upon to grow steadily throughout the winter, hence the reason that in many commercial establishments the whole stock of Palms is thoroughly overhauled, and receives extra attention during the dull season. For growing plants in pots, ranging from 3 to 7 inches, the type of house I prefer is a rather wide span-roofed one with a central stage, and side stages not more than 3 feet in width. If all stages are covered with spar or pounded clinkers, and

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hot-water pipes fixed beneath the central as well as the side stages, the heat is evenly distributed throughout the house, and with proper attention to damping and syringing, Palms in such houses may be kept in superb health.

It is not wise to be too particular in regard to temperatures; the great aim should be to always have the pipes comfortably warm, and to avoid sudden changes of temperature. If the thermometer ranges from 60° to 70° at night, and a few degrees higher during the daytime in dull weather, satisfactory progress will be made. During cold windy weather the thermometer may be allowed to fall several degrees lower as long as the pipes are thoroughly warm. In early morning the first duty of the attendant in charge of a Palm house is to damp the walls at the back of the hot-water pipes, and the floor or space beneath them. This to be done only when the temperature is at its proper point, on any occasion when it is somewhat low the damping ought to be deferred for a time. During the morning after the watering has been performed, and the temperature has risen, all dry places in the house should be moistened, including the space on the stages. Thoroughly healthy atmospherical conditions are then secured. During the afternoon the walls near the hot-water pipes usually need damping again, even in foggy weather, and the plants are then comfortable till the next day.

The plants require little syringing in the depth of winter, and should only receive it when bright gleams of sunshine occur, except in the case of plants in an extra dry corner, such as one generally finds in nearly all houses; in these cases, when hard firing is resorted to, it may be necessary to syringe the plants daily for a time. An expert with a good jet syringe performs the work in such a way that every particle of the under as well as the upper sides of the fronds is thoroughly moistened without using enough water to sodden the soil in the pots. The heavy-handed syringer cannot be tolerated in winter time. As the days lengthen and become brighter daily syringings will be needed. At the risk of being considered precise and prosy, I have treated this matter in detail, because I know that it is one of the most important points connected with successful Palm growing.

In regard to watering little need be said, as the same care is essential when dealing with newly potted Palms as with other plants, and when the soil is packed with roots far more liberal quantities are required. Whenever watering is done do it thoroughly, then withhold it till the soil is fairly dry again. Immense quantities of Palms are now raised from seeds, both in this country and on the continent, and during the winter months large numbers are potted. In all stages small shifts should be given. Young plants in "thimbles" when well rooted ought to be potted in 3½-inch pots, and in subsequent stages transferred to 5-inch, then to 7-inch ones, in which sizes they are in great demand for decorative purposes. Many young plants in the early stages are grown entirely in leaf soil, but large specimens do not keep in good condition long when potted in such light material. A compost which may be relied upon, is one formed of two parts of fibrous loam—inclined to be heavy rather than light—one of peat, and a tenth of sand. This compost should be pressed very firmly with a potting stick, and the surface finished with the fingers, always remembering to leave sufficient space for holding water enough to moisten the whole ball. If the soil about the root is moist when potting is performed, water will not be required for some days, then it should be given through a rose, and in the same way for some time after.

The most troublesome insects Palm growers have to contend with are the small white and brown scales, and although many insecticides are supposed to kill such pests without injury to the plants, few, if any of them, will really do so except when used at too great a strength to be safe. If the plants are dipped in an insecticide as soon as the slightest trace of scale is noticed, it may often be destroyed, but when once these pests gain a thorough footing the only effectual way of clearing them is by the tedious process of sponging; then by periodical dippings the enemy may eventually be overcome. The greatest care should, however, be exercised in purchasing only such

plants as are quite clean, for even if the price is high they are cheaper in the end.

Kentias are undoubtedly more largely grown than any other species of Palm, and either for private or commercial establishments they stand unrivalled for decorative work. Belmoreana and Fosteriana are the best varieties; the former is usually preferred to the latter on account of its more elegant fronds. Cocos Weddelliana still maintains its position as the best among the small graceful formed section, but Geonoma gracilis is well worth growing. Areca lutescens is a beautiful Palm, but unfortunately does not last well in rooms. A. Baueri and A. sapida are noble as large plants for conservatories, as they produce such bold leaves. Cocos plumosa is a gem among species which grow tall and slender, without undue spread of frond. If we add to the above list Latania borbonica, Corypha Wagoni, Phoenix canariensis, P. rupicola, Raphis flabelliformis, and Seaforthia elegans, I think for decorative purposes we could not well improve upon it. Other choice and rare species there are, of course, but such come only within the reach of a few.—PLANTSMAN.

LATE SPRING PLANTING.

WHEN I read the remarks by "H. R. R." (on page 571) under the above heading, I said to myself, surely there is such a thing as riding a hobby to death; and how this poor animal has been kept going up to the present by dint of whip and spur I know not. Certainly, to read the bulk of the articles on planting fruit and other deciduous trees which one comes across in the columns of the horticultural press, one would arrive at the conclusion that the proper time for this operation does not extend beyond a fortnight, or at the most a month, in the autumn, and that to attempt to plant at any other time is, as your correspondent calls it, a makeshift.

Unfortunately for nurserymen no one, so far as I can see, attempts to confute these statements about early planting, and consequently the amateur works him or herself up to a pitch of frenzy, and writes to the nurseryman about the second week in November, saying that it is too late to plant fruit trees, and that the order which has been given must be countermanded; upon which the nurseryman smiles a sickly smile, and after using his blue pencil to cancel the order, dictates a letter, as soothing as he can make it, to his customer, explaining that, with the best of endeavours, it is out of the question, that all one's customers can be supplied in one week, and so on and so on.

But what are the facts of the case? I believe, with your correspondent, that there is a time in the early autumn, when the leaves have changed but are still on the trees, when, given sufficient moisture in the soil, deciduous stock may be transplanted with every certainty of success, and when they will make fresh roots so quickly as to be established in their new quarters before winter sets in. For many years past we have supplied fruit trees to local allotment holders and market growers during the early part of October, frequently during the "Goose Fair" week, which is the first week in the month; the trees have been lifted in full leaf, and we have sometimes thought that they must suffer in consequence; but not at all; they are taken by cart the moment they are lifted and planted again as promptly as possible, and we have never heard of one of them dying.

Every practical gardener has had the same experience in removing trees early in the season from one part of a garden to another, and most, or many of them, have written to the horticultural press upon the subject. But, my good friends, of what use is the information to the general public? Not every gardener would care to drive to the nearest nursery, have his trees lifted, and see that they were replanted the same day, either by daylight or candlelight; whilst to the ordinary planter, who is tolerably happy if his trees get planted the same week that they are lifted, the information is of no use whatever; for if the trees lifted thus early are not replanted at once their bark shrivels, and they suffer considerably, even if they do not die. We must admit, then, that this very early planting is out of the

question for those whose trees have to travel long distances by rail, for to despatch trees safely by rail one must wait until the bulk of the leaves are fallen.

I also agree with your correspondent that there is a time for planting late in the spring, when trees are on the point of bursting into leaf, and even when the leaves are partly unfolded, when, provided the soil is in good condition and the trees are lifted and replanted immediately, they seem to suffer no check. But this, again, is of no use to the ordinary planter who has to procure his trees from a distance, for with a long journey the roots would be dried and the leaves shrivelled.

Where I join issue with your correspondent is in considering that all the time between these two extreme points of the planting season is an unsuitable period for planting. Every gardener, nurseryman, or market grower knows from long practical experience that fruit trees may be planted with safety at any time between November and March, and that if one can lift and replant at once the season may be extended both ways if the weather be favourable. But the point which I think it is most needful to impress upon the inexperienced is, that, no matter what the month is, the great factor to insure successful planting is that the land shall be in good condition at the time the trees are placed in their final positions.

It will not need much explanation to show that upon strong, sticky soils, in districts where the average rainfall is at all heavy, this must mean early planting, for when the winter's rains have fallen these soils are, as a rule, difficult to plant satisfactorily. Again, we all know that certain stock, such as Roses, Briars, and a few other things, succeed best when planted early; yet even here the exigencies of business or stress of weather often upset the routine of a nurseryman's work, and I find, on referring to my diary, that in 1892 we were planting standard Briars March 21st which should have been in before Christmas, and that the result was a good growth. Setting aside exceptional soils and subjects, I maintain that trees planted when the land is in good condition succeed equally well if planted in November, December, January, or February.

Experiments upon this point have been undertaken at the Duke of Bedford's Experimental Fruit Farm, the results of which we shall look forward to seeing in print; but so far as they have gone, I think they bear out my statement that the date during the months named has much less to do with successful planting than has the condition of the soil. I always hold that trees cannot be satisfactorily planted in mud, and therefore if trees arrive when the ground is in a bad state, either through too much wet or the break up of a frost, they should be laid in a trench, with the roots well buried, until the land is in a fit state for planting, be that in a week or a month; indeed, when any considerable number of trees have to be dealt with they should always be laid in a trench prior to planting, as nothing is more injurious to trees than to have their roots exposed for hours, or even days, to the influence of drying winds or sun.

One other point about planting is that the trees should be looked after when the planting is finished. In these days, when so much has been written about careful planting, it is rare that one hears of really bad work, such as a correspondent related to me a while ago. He said to me, "My neighbour, Mr. So-and-so, has had some trees from you; and if they die, you ask him how they were planted. I saw the work done, and it was in this manner: The holes excavated were about the size of a good silk hat, and the trees were twisted round to get the roots in, and then some soil was thrown on the top, and a stamp of the heel given to complete the operation." This, although told as related to me, is, I venture to think, an extreme picture, yet trees must be badly planted or shockingly neglected afterwards to account for so many dying.

As a rule the man whose trees die is the man who purchases a dozen, out of which half die; the man who buys 500 sometimes loses two or three. Now I venture to guess that the dozen trees were days out of the ground before being planted—I have known them to lie in a back yard a week—whilst the 500 would be put in the ground as fast as men could lay them in. But even when planted the work is not over, and trees which are removed late in the spring should have the ground around them constantly stirred with the hoe to fill up all cracks and prevent evaporation from the soil.

During the last few years we have transplanted annually some 2000 to 4000 fruit trees, and this at a time when all sales have ceased, owing to the season being so far advanced. In 1897 we did not finish till April 15th, and the men planting the trees said they would all die; nevertheless by constantly stirring the ground with the hoe, watering being quite out of the question, our losses have not averaged more than two trees in 1000, whilst the trees thus removed have carried crops of fruit fit for an exhibition table. Some trained trees transplanted April 15th, 1897, have this year (a dry season) shoots from 6 to 7 feet in length, and trained Apricots removed late in March this year have shoots $1\frac{1}{2}$ to 2 feet high. All this I attribute to careful planting, and to the use of the hoe on the surface of the soil, and I am sure that if more attention were paid to this form of cultiva-

tion we should not see so many stunted looking trees about our gardens and plantations.

In conclusion let me add that I hope your correspondent "H. R. R." will not say that my examples are all culled from late planting. I notice these as cases where difficulties were overcome. The so called dead time of January and February is, when the bulk of a nurseryman's work is of necessity obliged to be done, and I think that the results will, as a rule, bear comparison with any planting done at what is generally considered a more favourable time, the exceptions being where land was planted when too wet; when this has been done the result can generally be seen for more than one season. These remarks are intended to apply chiefly to fruit trees; where evergreens and Conifers have to be taken into consideration I should not advise planting during the early months of the year.—A. H. PEARSON, *Chilwell Nurseries, Notts.*

GLOXINIAS.

THE Gloxinia occupies a prominent position among stove tuberous-rooted flowering plants. With a good collection of tubers flowers may be produced from April to October. Large tubers make a considerable amount of growth, and when in bloom are very attractive. Medium sized tubers form neat and effective plants for general decoration in an intermediate house. During summer greenhouse treatment suits Gloxinias, though small tubers and seedlings grow better in a moister atmosphere.

In commencing the culture of Gloxinias, perhaps the most interesting method is to raise tubers from seeds. A temperature of 65° is requisite for this. In a well heated stove this heat can usually be maintained in February, which is a good time to sow seed. It may be sown in January in bottom heat not below 65°, only care must be exercised that the seedlings receive no check. The compost employed should consist of sandy peat, leaf soil, and sand, well intermixed and used moist. Place this in well drained pots or shallow seed pans. Make smooth and level on the surface, and give a gentle watering. When the water has drained away scatter the seed thinly on the surface, and follow with a slight dusting of sand—fine white sand. To lessen the need for water, which ought not to be required until the seed has germinated, cover the pan or pot with glass, and darken with moss or paper. If not sown too thickly the seedlings will grow sturdily from the first.

When the plantlets are of sufficient size to be lifted with a label they may be removed from the seed pan, transferring to a similarly prepared pan, placing them an inch apart where they will be able to strengthen prior to potting them singly in small pots. Heat, moisture, and subdued light, with the pots standing on a moist base, are essential matters in encouraging growth. Under these conditions great advances in growth will be made, and before the summer is over, or at least in autumn, these early raised seedlings will commence to flower. They cannot flower so profusely as larger tubers, but even if only a few blooms are produced it serves to show the character of the plant and the colour and quality of the bloom. In autumn the tubers may gradually go to rest, assisting them to do so by affording less and less water until they lose their foliage. Place the pots on their sides for the winter in a cool, dry part of the house.

The culture the second year commences when the tubers start into growth. They will do this naturally in the pots they are dried off in, but they must not be allowed to do so for long before shaking away the old soil and repotting.

The compost for potting tubers should be rich and generous. Peat and loam of a fibrous character may be broken up in equal quantities, adding half of leaf soil and half decayed manure with sand and charcoal. Place the tubers just below the surface, not burying the new young growth. At first the pots should be small, eventually shifting the plants into larger pots when the first are filled with roots, and in this size the plants may flower. Water must be given sparingly at first, heat and moisture being the chief aids to growth, but as this advances increased water will be demanded by the roots.

Though Gloxinias enjoy in the early stages artificial heat and moisture, there is no need to continue it all through the season, as when the plants come into flower greenhouse treatment is adapted for them. The very earliest started tubers will, however, require the continued temperature of the stove or intermediate house if they bloom before June.

Only a first-class strain of seed should be dealt with. The spotted varieties have large and varied flowers with delicate markings, scarlet and blue usually are the predominating colours. If many white-flowered Gloxinias are required a packet of seed of a white strain should be sown in preference to depending or obtaining them from a mixed stock. As a rule the erect-flowering varieties are kept separate from the drooping-flowered varieties. Both are worthy of culture, though some may prefer the erect-flowered varieties as being the most useful and showy for general purposes.—E. D. S.



SHOW SCHEDULES.

"W. G." (page 561) cannot have seen many autumn exhibitions during the last few years, or he would not suggest the inclusion of a class for "miscellaneous plants arranged for effect." Nowadays the exception is to find a show without such a class. Truly, as he says, the Hull Society does include this in their programme, and in no other exhibition are such groups to be seen. I do not attach much importance to the suggestion to include more formally trained specimens. These are gradually being left out, especially the standards and pyramids. Beyond examples of cultural skill, what artistic effect or even use can be claimed for such, I would ask?

To make our autumn exhibitions more pleasing new departures are required. In plants the freely flowered examples of single Chrysanthemums, Pompons, and the smaller forms of Japanese, intermixed with Palms and other suitable foliage plants; and dwarf plants suitable for conservatory decoration carrying exhibition blooms in small pots, showing the value of the Chrysanthemum in that form, would be a pleasing addition to our shows. The height of growth ought to be stipulated, as also should the size of the pot. Both of these are practical suggestions, and would produce desirable results.

In cut blooms any form of arrangement that dispenses with the orthodox cup, tube, and stand would be welcome; or perhaps not dispense with this plan entirely, but add other methods for comparison, and allow the best to preponderate in the future.

Chrysanthemums, large and small, are admirably adapted for disposal in vases of almost any type, with or without added foliage. There is therefore abundant scope for committees to give the public more variety at their autumn shows. Let us see if they will rise to the occasion.

DECORATIVE VARIETIES.

As "W. S." (page 561) correctly states, decorative varieties are equally as valuable to many growers as the popular show blooms are to exhibitors. The latter, too, pay special attention to the decorative aspect; in fact, they are generally the men who ascertain the qualities of the newer varieties for both purposes. Many sorts which are unsuitable for exhibition are most valuable additions to the decorative section.

For the information of "W. S." and others I have noted a few deserving varieties that, added to those named by him, will provide bloom in quantity, and extend over a long time. R. Hooper Pearson is without doubt the finest yellow flowered Chrysanthemum for this purpose. The lustre of colour is rivalled by none; while the habit of growth is all that is required. Mr. Jones has given the Chrysanthemum world many sterling novelties, but none better than this. Clinton Chalfont is a cross apparently between a Japanese and a reflexed variety. The florets are broad and stiff, forming just the flower required for vase work; the colour is rich. The new Chevenx d'Or, one of the "feathery" type, is paler in tint, but very effective in a mass. Madame Liger Ligerneau is dwarf in growth, clear yellow in colour. Hugh Crawford, too, is a useful addition to the Japanese section. J. E. Clayton, a yellow sport from Eva Knowles, possesses all the characteristics of a decorative Chrysanthemum. Golden Gate is one of the best of late yellows, its broad florets having a tawny tinge about them that affords variety.

Bright colours are extremely useful in this section, especially when they flower later than ordinary sorts. H. J. Jones easily heads the list in this colour. The blooms are exceedingly bright, the growth stiff and floriferous. Reginald Godfrey is dwarf and stiff in habit, just the type for vase work; the blooms are full and solid. Joseph Chamberlain gives a colour equalled by no other, while Matthew Hodgson and Royal Standard are also desirable varieties. Rycroft Scarlet is the nearest approach to this colour of any, it is dwarf and exceedingly free. Pride of Madford must not be omitted when dealing with bright coloured varieties, as when grown to give flower in quantity the florets reflex, showing the bright purple amaranth colour.

White flowered sorts are still unsurpassed for use at Christmas time. Madame Carnot, one of the finest exhibition varieties we have, is equally good to give flower in quantity. The white sport from Clinton Chalfont is a fac-simile of its parent in all except colour. This is snow white and a valuable addition. Isabel Williams has the colour of Elaine and the petal of Niveus. Mrs. Weeks should be more grown for this purpose than it is, as it is really very fine. The growth is all that could be wished, and the blooms extra fine in quality. Decidedly one of the best, if not absolutely the best of white flowering sorts for January, is the Queen. The growth is some-

what tall; this is really an advantage, as long stems can be cut with the blooms. Framfield Pink is quite the best in this section, the colour is quite warm as it were. Madeleine Davis is paler but chaste. —E. MOLYNEUX.

KALANCHOE FLAMMEA.

THIS comparatively new plant, that was exhibited at the Hybridisation Conference, from Kew, and of which the stock for distribution has since passed into the hands of Messrs. J. Veitch & Sons, Ltd., has a great future before it. There can be little doubt but that for general use it will become one of the most popular plants in cultivation, and that it will "catch on" with the public when it is placed before them by the market growers is equally certain. By the courtesy of Messrs. Veitch & Sons we are now enabled to give an illustration (fig. 4) of this plant. It clearly depicts the habit of growth, but does not afford a true conception of the bright beauty and exceptional attractiveness of the profusely borne flowers.

Relative to Kalanchoe flammea, "W. D." wrote in the *Journal of Horticulture* for July 13th, 1899, as follows:—"About four years ago seeds of this new species were presented to Kew by Miss Cole, who, with Mrs. Lort Phillips—according to the account given with the figure t. 7595 in the 'Botanical Magazine'—collected it in Somaliland. It flowered for the first time at Kew in 1897, and was then seen to be by far the most ornamental of the Kalanchoes in cultivation, and was considered to be one of the best indoor plants for general work introduced of late years, a future being predicted for it equal to that enjoyed by some of the most useful market plants. A good quantity of seed was ripened in 1897, and sown eighteen months ago, and from that seed several large plants flowered. It is of easy cultivation. The Kew plants vary in height from 15 inches to 2½ feet, and are surmounted with heads of bright red flowers, the heads of flowers ranging from 9 inches to 15 inches across. They grow well in a cool greenhouse, and can be finished in pots from 3 to 6 inches in diameter. When young they may be stopped once, or allowed to grow with a single stem until they flower. A mixture of loam, leaf mould, and sand is a suitable compost, and propagation may be effected either by cuttings or seeds. The flowers last in good condition from six to eight weeks."

GINKGO BILOBA.

FOR the vicinity of towns or smoky districts probably no tree is better adapted than this Conifer, which is the sole remaining member of a genus which was in former ages spread over the whole of the temperate and warmer parts of the earth; fossil specimens of Ginkgo being comparatively abundant in various parts, and are practically identical with the only representative of their race.

It is a native of China, and, though often given as a native of Japan, it is only found near temples in this latter country, where it has evidently been planted. Though very tenacious of life, and enduring smoke and dust as well, or even better than, any other tree, it is not very largely planted, probably because it is slow of growth and does not make a large tree in a comparatively short time. In a young state it is an upright, straight-stemmed plant with a few short side branches, but when older it forms a spreading head and makes a distinct looking, handsome specimen.

The name of the Maidenhair Tree applied to it has been taken from the resemblance the leaves bear in shape to the separate pinnae of the Maidenhair Fern, but the likeness is only in shape, the leaves of the Ginkgo being 2 or 3 inches across, two-lobed, and thick and leathery in texture. In general appearance it is unlike any other Conifer, being one of the few deciduous ones, but the flowers and fruit are very like those of some of the Taxaceae.

The Ginkgo, or, as it is also popularly designated, *Salisburia adiantifolia*, is said to be cultivated in China and Japan for the sake of its fruits, which are stated to be poisonous when raw, but sweet and edible when roasted. The wood is of a yellowish colour, fairly hard, easy to work, and takes a very fine polish.—C.

IMPROVEMENT IN QUALITY AND GERMINATING POWER OF SEEDS.

—We learn that the consulting botanist of the Royal Agricultural Society has reported that the superior quality of seeds examined and tested during 1898 has been maintained during 1899. The more important Grass and Clover seeds have reached a germination of over 90 per cent. Only one case of dodder in Clover seed was observed. In this connection it may be noted that the President of the Board of Agriculture is reported to be arranging for the appointment of a departmental Committee to consider the question of establishing machinery for testing the quality and vitality of seeds.

LONDON GARDENS OVER FIFTY YEARS.

No. 17.

PROBABLY you could not have found, forty or fifty years ago, a pleasanter spot for a stroll than amongst the market gardens and nurseries of Sand's End, Fulham. These grounds, and sundry old-fashioned houses having large private gardens, occupied the space between the King's Road and the Thames, ending near the bridge. It was not long before her Majesty came to the throne that the king's private road to Fulham was thrown open; up to 1830, no vehicles could pass except by tickets of admission, and from Buckingham Palace to its termination there were placed no fewer than six gates or bars. Sand's End, which some think named after Lord Sandys of Chelsea, but in fact we cannot tell, was not more than a half-hour's walk distant from Belgravia; on a bicycle ten minutes would have sufficed to carry one there. But, on such a machine, people could not then have got along the narrow footpaths or lanes amongst the gardens, which are now merely memories, for it is absorbed into London. Since 1837 the growth of Fulham is very marked, this suburb having advanced from 12,000 to 114,000 inhabitants.

Proceeding westward from Chelsea, and leaving behind us the former site of famous (or infamous) Cremorne, also the establishments of several nurserymen already mentioned, we come to Stanley House. It has a history connecting it with the Gorges, the Stanleys, and others of note; to the gardener it may recall the Countess of Strathmore. This lady distinguished herself by her love of horticulture in the reign of George III. At this mansion she built a number of conservatories, and was gathering a large collection of exotics, when her home was broken up by marriage with a scoundrel named Bowen. Crossing the bridge, our approach to the gardens was soon intimated by a tavern bearing the significant motto of the "Hand and Flower." This might indicate some time the extensive culture of flowers in the locality, but in my experience it chiefly produced vegetables and fruit, Sand's End, like the rest of Fulham, sending formerly large supplies of both to the markets nearly all the year, for they managed to have a quick succession of crops.

Notable amongst the gardeners of the place were Steel, Matyear, and the Bagleys, who had also land in other districts. It was a sight not to be forgotten, the lines of Apple and Plum trees, with their autumn show of fruit; frequently there was an undercrop of Currants, or vegetables, but all these orchards have been swept away. It was curious, that along some of the hedges the Crab or wild Apple showed conspicuously beside the Sloe and Whitethorn, with occasional dwarfed Oak and Holly. Some of these gardens had no protection of hedges, but were bordered by narrow ditches; they seemed exposed too much, especially when the ground happened to be thickly covered with hand-glasses covering Cucumbers or small salad, and so in peril of stones, suffering too in hailstorms.

Going along what used to be known as Bagley's Lane, Sand's End, some years ago, on a June morning, I witnessed a remarkable display of the insect called the Rose beetle, also *Cetonia aurata*. It is a beautiful beetle, of golden hue, but a mischievous species, though perhaps not generally recognised as a garden foe. The English name was given because it has been seen haunting the Rose; in this case the attraction was a tall Privet hedge just in bloom, and it is no exaggeration to say there were hundreds upon the wing in daylight. They have been noticed to attack the flowers of the Strawberry with their trenchant jaws, also those of the Turnip reserved for seed. Less observable are the operations of the grub, which resembles that of the cockchafer, and preys upon the roots of many plants, living two years in its larval stage.

Peterborough House, between Sand's End and Parson's Green,

claims a short notice. It was famous for its trees and flowers. A friend says it has as yet escaped demolition; no doubt its gardens are diminished. Faulkner, writing of Fulham, remarked that the place had "decayed" since last century; if so, it underwent a change for the better afterwards. One of the marvels of Peterborough House was a Tulip Tree, 76 feet in height and 5 yards in circumference, since dead. When I visited Sand's End, about 1877, the gardens of this house were under the care of Mr. Roberts, who delighted to exhibit a collection of the old border flowers; he had also many medicinal plants. Forcing was specially attended to; thus he provided Cucumbers and French Beans all the year round. Nearer the Thames, Broomhouse Lane recalls the fact that in the olden time a stretch of land belonging to the "Broomhouses" was covered with the "bonny Broom." Part of this land became market gardens, then was built over. The neighbourhood of Sand's End has had its share of aristocratic visitors of late years, who frequent Hurlingham and its park.

But, to gardeners generally the centre of attraction at Fulham was its famous nursery, one of those London establishments which could show a long and interesting record. This has now disappeared, though part of its site is still open ground. Through many years it belonged to the Osborns, so was often called by their name towards the close. That of "Fulham Nursery" seems sometimes to have been applied to that of Mr. Dancer, near Percy Cross. Few nurseries could boast of a better situation—the trees and plants were well sheltered, the soil all that could be wished. Through a succession of years the firm took a creditable position at shows and exhibitions. The nursery occupied about 20 acres, the greater part was planted with deciduous ornamental trees and evergreens, a portion being allotted to fruit trees. There was also additional ground at Sunbury used for Conifers, Roses, and miscellaneous plants. One of the facts that particularly impressed a visitor to the Fulham Nursery was its tidiness and order. About the houses, as a friend remarked a few years since, they were divisible into three groups. Some had an unmistakeable appearance of old age, they had done long service; and some again, if not venerable, were middle aged. Besides these were others, evidently strong and youthful, which had their work before them, exhibiting the latest improvements.

The exact date is doubtful, but the nursery was certainly opened early in Anne's reign by Christopher Gray, presumably one of the Scotchmen to whom horticulture owes so much. He was able in 1740 to print a list of the trees and plants he had at Fulham. Loudon and others have stated Gray had the first British *Magnolia grandiflora*. This has recently been questioned, and a claim made for one of older date in the West of England. Certainly one of the most notable trees in the nursery was a big specimen of *Magnolia Thompsoniana*. From Gray the nursery passed to Burchall, then to a firm of three persons, finally to the Osborn family. Mr. Robert Osborn, who became proprietor in 1877, was the grandson of the first of the Osborns. The ground had then been diminished, and in 1882 the few acres left were taken by Messrs. Veitch & Sons.

Many rare plants were sent to the Fulham Nursery by Messrs. Garden, Catesby, Colliuson, and Miller, or other celebrated collectors, and it had a large number of Bishop Compton's exotics. One of the remarkable objects was the Fulham Oak, a curious variety of the tree, which had a resemblance to another sport of Nature, the Locombe Oak. Seedlings from the Fulham Oak reverted to the usual type, so it has always been propagated by grafting. There were here fine examples of *Sophora pendula* and *Celtis occidentalis*, and one of the houses displayed under the stage a huge mass of the old Cape plant, *Anomatheca cruenta*, laden with deep crimson flowers. Several of the houses, even till a recent date, had a splendid show of Palms and Ferns.—J. R. S. C.



FIG. 4.—KALANCHOE FLAMMEA.

COMMERCIAL GARDENING,—No. 1.

THE notes on the expansion of the hothouse industry published in the *Journal of Horticulture* last year (page 268, September 28th), which were taken from Mr. W. E. Bear's report on "Flower and Fruit Farming in England," would, no doubt, cause a certain amount of surprise to those readers who know nothing of the hundreds of acres of glass houses round London, devoted to the production of fruit, flowers, and vegetables for market.

There are hundreds of small growers scattered all over England, who have never had the opportunity of visiting districts like Worthing, Turnford, Ponders End, or Bexley Heath. To visit these places, and the large establishments situated there, is often one of their greatest desires, but it is another matter to try to satisfy their wish. They find that the large growers are either too busy or do not care about visitors going round the nursery, and consequently it is only a few that know the almost clockwork methods which some of our best growers follow, and the splendid way in which their crops are grown. Knowing, therefore, the difficulties which stand in the way of your readers paying "visits," the writer (who has long been a worker in some busy hives of industry) thinks perhaps a few articles on the methods of market growers may prove useful to them.

HOW THEY GROW CUCUMBERS.

There are two kinds of houses that "the trade" build in which to grow Cucumbers, one 12 feet and the other 15 feet in width, and any length from 50 to 300 or more feet. The 12 feet wide houses are thought to be the best suited for those who have to grow Cucumbers in a cold and exposed situation, but there is no doubt that the larger houses are more useful and profitable, and cost very little more to build.

The big growers build their houses in blocks—i.e., instead of each house being separated from the next by a partition wall, the whole block, which may consist of five or fifty houses, have no partitions between them, but the gutter boards rest on wood piers. There are very few growers now who use more than four rows of 4-inch pipes to each house, even when the house is 15 feet in width. The cost of a 12 feet wide Cucumber house will be from 12s. to 14s. per foot run to build, while those 15 feet in width can be built at a cost of from 14s. to 16s.

RETURN IN CROP FOR OUTLAY.

No doubt the figures we shall give under this head will be open to criticism, for many growers can no doubt show a greater return both in the quantity of fruit and the price returned for them. We shall, however, give what some crops realised, the number of plants grown being 6000.

Most market growers endeavour to grow at least two crops of Cucumbers in one year. The first plants are obtained from seed sown now, and they fruit from March till the end of June; the next batch is sown the first week in June, and planted out between the old plants as soon as they are ready. A good average crop for the first set of plants will be from three to four dozen to each plant, and from the second crop from two to two and a half dozen to the plant. The latter are planted $2\frac{1}{2}$ feet apart, and as the fruit sold in the market will fetch on an average 2s. a dozen, it is not a hard matter to find out what one is likely to realise from a house of "Cues." Of course there is also the catch crop to consider, for market growers who have 12 feet wide houses grow four rows of French Beans in them, while two rows of early Tomatoes are grown down the centre of the larger houses. Both Beans and Tomatoes are planted out or potted at the same time as the Cucumbers are planted. The Beans are over in a month from planting, the Tomatoes in ten weeks.

RAISING PLANTS.

Nearly all Cucumber plants grown for market work are raised from seeds. The seed, as above indicated, should be sown at once, if fruit be wanted at the end of March. Very little is gained by very early sowing, for the day of big prices for Cucumbers is past, and what may be gained now by getting the fruit a week or fortnight earlier than the end of March is not worth having, as the extra fuel required often costs more than the profit will amount to. Nearly all market growers sow the Cucumber seeds in 48's or 5-inch pots. The soil used is a mixture of three parts turfy loam and one part of decayed farmyard manure. Turf that has been stacked long enough for the grass to decay is found most suitable. The 48's should be clean, and each of them must have a crock put in it, and over this about an inch of rough soil. On the top of the rough soil place about an inch of prepared soil, and then press one seed into the centre and just cover it. After the sowing is finished give the soil a good soaking of water, and then place the pots in heat.

It is of no use to try to induce Cucumber seeds to germinate in a low temperature. They will not grow, but rot. The temperature most suitable for germination is 70° F. by night and 80° to 85° by day

with sun heat. On very cold nights the temperature may be allowed to fall to 60°, and no harm will accrue, but the temperature first named is the one to aim for.

After germination has taken place and the seed leaves are formed, from 65° at night to 85° by day will suit them well. Growers not provided with a propagating house no doubt will find it difficult to obtain the temperatures named. There are two ways of getting over this difficulty. The first is to make up a small hotbed in the glass house, put a garden frame and light on it, and place the pots inside; the second plan is to sow in small 60's, and place them inside 48's or 32's, and stand the latter on the hot-water pipes, covering each pot with a piece of glass. The plants in the 60's can be transferred to 48's as soon as they are large enough.

TREATMENT OF THE SEEDLINGS.

When the seedling Cucumbers raised in 48's are big enough, the space left at sowing must be filled to within half an inch of the top of the pot with prepared soil. This operation is best performed when the plants have two fully developed seed leaves, and the first rough leaf is about 2 inches across it. Soil similar to that used for the sowing should be used, only have it more lumpy. Do not press the soil when tending at all firmly, and give water carefully until the new roots have begun to extend freely in the new soil. The temperature at this stage should be 65° at night and 80° by day. The atmosphere must be kept moist by judicious damping, and when the plants are large enough they must be secured to stakes.—TOM SLOWMAN.

EARLY PEAS.

In large establishments Peas cannot be had too early, and various means are adopted for advancing the crop. Many amateurs, too, adopt means for having an early supply.

November-sown Peas sometimes come in the earliest, and in other cases they are behind those sown in spring. If outdoor culture is exclusively followed, the autumn-sown Peas might be the first in most instances; but if a little extra attention be given to spring-sown Peas they will be the more satisfactory. I think it would astonish many if it was only known the quantity of seed that is lost through various causes by November sowing, and the patchy rows we often see in spring promise anything but a full and abundant crop. Mice and other vermin are more destructive on these than those sown at any other time, and it is generally before the growths come through the soil that the injury is done. From this it may be inferred that if early Peas were sown under protection, and planted after they had grown a few inches, losses on blank rows would be nearly unknown. This is my opinion, and of all ways of forwarding early Peas I think there is none better than sowing the seeds under cover and planting out.

I have tried many ways of raising young Pea plants—such as sowing them in turves, in tiles, old waterspouts, and boxes, but I never found them do so well as in 3-inch pots. Sowings made in two or three hundred of these (I have to cater for a large family) supply plants to make several fine rows. No drainage is put in the pots, but a little rough manure is placed at the bottom of each, and then rich soil is rammed firmly over this until the pot is about three parts full, when from eight to twelve Peas are put in each and covered with a little more of the soil. They are then placed closely together in a cold frame or cool house, and no water is given until the growths are seen. These soon appear, and water is supplied afterwards as it may be required. They are placed as near the glass as possible, but never in forcing heat, as this would weaken the growths. Air is admitted on all favourable occasions until they are large enough, and the weather permits of their being planted out.

When the time comes for planting the pots are well filled with healthy roots, and the work is done without injuring a leaf or root. All our best spring and early summer Peas were raised in this way last year, and I never had better. The labour required is inconsiderable compared with the advantages. In planting we do not place the potfuls as close together as they will stand, but each little tuft is planted about 6 inches from the other. Before they come into pod they look as if they were or had been originally packed in close together. If a little old potting soil can be placed against the roots at planting time it assists them in growing. The stakes are inserted into them at once, and if the situation is bleak or the weather cold a few Fir branches or Laurel trimmings are put in here and there for shelter.

With valuable Peas it is a bad plan to trust the seed in the ground early in the season, as from various causes many may fail; but if the plants are raised in pots all dangers of the kind cease. In fact, all our new Peas are raised in this way, whether they are wanted in spring, summer, or autumn, as many of them can only be had in small quantities.—K. G.



RECENT WEATHER IN LONDON.—The weather in London during the past few days has been very changeable. On Sunday morning it rained heavily, but the sun shone at mid-day and during the afternoon, and was followed by a frosty night. Precisely the same conditions prevailed on Monday until the evening, when rain again fell. Tuesday was showery, but cleared at night, and the stars shone brightly and clearly. Wednesday opened wet.

WEATHER IN THE NORTH.—The weather of the week ending the 8th inst. has been variable, and for the greater part disagreeably dull and wet. On the morning of the 5th, and again on the 7th and 8th, there was frost of from 3° to 5°, but the afternoons and evenings invariably brought cold showers. The hills all round have been covered with snow.—B. D., *S. Perthshire*.

YUCCAS.—*Apr*opos of "A.'s" interesting and instructive notes (page 569) respecting the decorative value of these plants, I am reminded of the value of several species for flower garden vases, tubs, or other suitable receptacles on the terrace. For such purposes one of the most imposing is the Adam's Needle, *Y. gloriosa*. The more graceful, however, for pedestal vases is *recurvifolia* or *pendula*, while *aloifolia*, as referred to by "A.," forms a noble and graceful object during the summer months in sheltered positions; the same remarks apply also to *aloifolia variegata*, *sperba*, and *serrulata*. It is said that *Yuccas* seldom perfect seed in this country, excepting, perhaps the profusely flowering *filamentosa*, the most commonly grown in the flower garden. The sterility in question has been accounted for by an American entomologist as owing to the absence in this country of a particular kind of moth, a native of South America, and which there aids the fertilisation of the flowers. One of the most prolific species is *acuminata*, commonly called the Spanish Bayonet, on account of its long, stiff, and sharp pointed leaves.—W. G.

EUCALYPTUS OCCIDENTALIS.—This is one of the few species of *Eucalyptus* that can be got to flower in a small state, and although the flowers individually are not very showy, the freedom with which they are produced makes the plant quite attractive. A specimen is now flowering in the Mexican house at Kew; it is about 12 feet high, the upper half being smothered with buds and flowers. The plant in question has been pruned to keep the head in shape, and possibly this somewhat hard pruning has something to do with its freedom of flowering. The branches are slender, and clothed with thick green leaves, 2 to 4 inches long. The flowers are creamy white, and borne in umbels of seven or more from the nodes on old and new wood. The chief attraction in the flowers is the large number of stiff thread-like stamens, which gives them a brush-like appearance. Like most of the other members of the family, this is an Australian plant, and grows well in any good soil. It is growing in an intermediate house at Kew, but a cold greenhouse is quite adapted for its cultivation.—D.

EARLY PEACHES.—Where Peach and Nectarine trees are started at the new year, or before, with a view of getting ripe fruit in April, the chances of a good and well-finished crop depend considerably on how the trees have been treated previously of course, but no matter how well ripened or how healthy the trees may be, much depends on their treatment in the earliest stages of forcing. Regarding temperature, it has come to be well understood that a low and gradually increasing one is the safest, but this is only one part of the work, and a more rational method of watering is much to be desired. Watering at the root may be said to be fairly well carried out, but to keep on throwing moisture about the house and all over the trees is entirely a mistaken idea. On fine days, when a liberal amount of air can be admitted, there is no harm, but the reverse, in gently dewing over the trees, as it softens the buds and makes them break kindly, as well as making any chance insect uncomfortable, but too much of it softens and weakens the growth, making it pale-coloured and yellow. Even later trees are not helped by these regular douches, often of cold water, but it is infinitely worse for the early ones. As in every other detail of culture, care and observation are necessary.—H. R. R.

PRESENTATION TO MR. HERRIN.—On the occasion of the retirement of this well known and respected gardener from Dropmore, Maidenhead, he was presented on the 29th ult. with a fourteen-day timepiece. This was subscribed for by the employés in Dropmore Gardens, all of whom entertain very great respect for their chief.

CALADIUM ESCULENTUM.—Plans will have to be made soon for bedding out and other arrangements in the flower garden, and propagation of various kinds of plants will soon have to be taken in hand. For those who like a fine-foliaged and easily grown plant for the purpose of summer decoration this fine Aroid will be suitable. At this time of year dry roots are easily procurable, and may be potted singly and placed into a newly started vinery or Peach house where the leaves will soon push up and the plant will be ready for putting out by the middle of June. They will make a fine show all the summer, and may be lifted again at the end of October.—C. HALL.

ANTHOLYZA ÆTHIOPICA.—This South African bulbous plant is closely allied to *Gladiolus*, and in habit is very similar to some of the species of that genus. In the south-west counties it is hardy, and can be left out all winter; but in most places, owing to its habit of commencing growth early, it should be grown in the greenhouse, or at any rate wintered indoors. When treated solely as a greenhouse plant it should be started into growth in October; it will then be at its best about Christmas or early in January, a time when the fresh, light green foliage is greatly appreciated. The flowers are rather small, but borne in considerable numbers on stout scapes well above the foliage. They are reddish brown in colour. In addition to the type there is a variety called *bicolor*, which, to some people, would be the better plant, being dwarfer, more compact, and flowering equally as well. Besides being a good pot plant, it can be grown planted in a border of loam. In such a place it soon reaches a good sized mass.—D.

HESSLE GARDENERS' SOCIETY.—A fortnightly meeting of the above Society was held in the Parish School Room, December 19th; Mr. Mason occupied the chair. A very interesting and suggestive paper on the culture of Peaches and Nectarines under glass was read by Mr. Reid, Swanland Manor Gardens, Brough. His thoroughly practical remarks were much appreciated. The essayist recommended systematic waterings throughout the whole season, and at no time must the borders be allowed to become dry, otherwise the casting of buds would ensue. Pruning of Peach trees immediately after the last fruit has been gathered was an important item in their culture strongly advocated by the essayist. This work being completed they have a far better chance of ripening the wood, so that with abundance of air the trees will produce sound matured fortified growths to commence with the ensuing season. Red spider and other insect pests are very troublesome, but with regular syringing and good general management they may be easily kept at bay. A vote of thanks to the Chairman and essayist terminated an instructive evening.—J. F. D., *Yorks*.

"FRUIT FARMING FOR PROFIT."—Mr. George Banyard, V.M.H., sends us a copy of the Fourth Edition of his Practical Treatise on the above important subject. "Practical" it undoubtedly is, and the best evidence of its value and acceptability is that of the continuous demand. The work appears to have been largely rewritten, and is brought quite up to date in the selection of varieties of fruits for planting, some of the older having been superseded by recent additions. Nowhere can the most advanced methods of Kentish fruit growing be found so completely and accurately described as in this well printed and substantially bound work of 200 pages. In a chapter on planting it is truly said, "The holes dug for planting in wet soil, become so many traps for the water, and if the soil is not particularly good the roots do not travel from the original hole, and the trees come to grief in a few years." The author believes in and advocates thorough work: he gives an example of contract planting thus—"On removing the dead trees it was found that in order to make a sightly job the planter had sunk the tall trees deeply in the ground to make the heads come level: he had literally dug graves for them. The trees were a bad lot to begin with, being all heights and sizes." Owners of plantations have usually to pay dearly for so-called cheap trees and shuffling work. Planting may be done, we are correctly told, "in November and all through the winter till March, the main point being to have the ground in good working order." The work contains plans and illustrations, and cannot fail to be useful to growers of fruit. It is a handy half-crown book, and well worth the money, published by Mr. W. S. Vivish, King Street, Maidstone.

— **DEATH OF MRS. WM. PAUL.**—We learn with deep regret of the death on the 7th inst. of Mrs. W. Paul, wife of Mr. Wm. Paul, F.L.S., V.M.H., Waltham Cross. The deceased was in the sixty-seventh year of her age. Readers of the *Journal of Horticulture* will unite with us in offering sincere condolences to Mr. W. Paul in his great bereavement.

— **ROYAL METEOROLOGICAL SOCIETY.**—The annual general meeting of the Society will be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 17th inst., at 7.45 P.M., when the report of the Council will be read, the election of officers and Council for the ensuing year will take place, and the President, Mr. F. Campbell Bayard, LL.M., will deliver an address on "A New Discussion of the Greenwich Meteorological Observations, 1848-1898," which will be illustrated by lantern slides. The above meeting will be preceded by an ordinary meeting, which will commence at 7.30 P.M.

— **STARTING POTATOES PRIOR TO PLANTING.**—We have several times suggested the sprouting of Potatoes under glass to obtain earlier crops, as we had practised it with success more than thirty years ago. The Kansas Experiment Station tried it some time back, planting whole Potatoes in a box of sand on February 23rd. The blossom end was left up, and about one-fourth of the Potatoes exposed to the sunlight at a temperature of 50° to 60°. Vigorous sprouts soon started, and, says the "American Agriculturist," on March 22nd they were planted in furrows just as they stood in the boxes. Similar rows of Potatoes from the storage room, not sprouted, were planted at the same time. The sprouted Potatoes started ahead, and kept ahead all the time. On June 1st the sprouted Potatoes showed excellent young table Potatoes in the hill; June 16th they were still ahead, and when dug on July 24th the sand-sprouted Potatoes had better tubers and gave 10 per cent. larger yield. Later experiments, conducted by the same experts, showed similar results.

— **BAMBUSA VULGARIS STRIATA.**—By reason of its bright-coloured stems this is one of the showiest of the several Bamboos cultivated indoors in this country. For a number of years it was accorded specific rank, and was then known as *B. striata*; it is now, however, admitted to be a variety of the giant *B. vulgaris*. It was originally introduced from China, but is now sent home from a number of places, having been pretty widely distributed in the tropics. Although when planted out in a border of rich soil in a tropical house it attains a height of 20 feet, it makes a handsome plant of half that height in a pot, and for ordinary establishments would be found more useful grown in that manner. In general appearance it is of somewhat loose habit, with numerous branches on the upper portion of the stem bearing a quantity of bright green leaves varying from 5 to 8 inches long and from 1 to 2 inches wide. As before stated, the stems are the most ornamental part of the plant, being bright, glossy yellow, striated with green. It requires the temperature of a stove and should be well fed while growing. A few plants in pots would be found useful for house decoration.—K.

— **GRAND YORKSHIRE GALA.**—The annual meeting of guarantors and life members of the Grand Yorkshire Gala was held last week at Harker's Hotel, York. Alderman Sir C. A. Milward presided. The Chairman said it was a matter of sincere congratulation to them all that last year's Gala was one of the most prosperous in the annals of the institution, and they could only hope that the forthcoming Gala would be equally as prosperous, although they had not the prospect of a good start. He was afraid that the holding of the Royal Agricultural Society's Show in the following week would materially affect the attendance at the Gala. He had to commence the business by proposing that the Lord Mayor be elected President for the ensuing year. Mr. Alderman Border seconded the motion, and said they hoped it would not be twelve years again before the Lord Mayor again presided over the destinies of the Grand Yorkshire Gala. The resolution was passed unanimously. The Lord Mayor then proposed that Sir Christopher Milward be elected Chairman of the Council. Mr. Alderman Border said he would be glad to render any assistance he could in relieving the Chairman of duties at night meetings. Sir Christopher said he would again accept the office if he were relieved of night work during the months of January, February, and March. Mr. Alderman Border was re-elected Vice-Chairman; Mr. Jos. Wilkinson was re-elected Treasurer; Mr. Simmons was unanimously re-elected Secretary; Messrs. Pearson and Taylor were re-elected Auditors. The following grants were made:—£650 for the floral fête, £230 for music, £120 for fireworks, £60 for balloon ascents, and £175 for amusements.

— **STUDY THE APPLE MARKET.**—Growing fruit is one thing and marketing it seems quite another, yet both should receive watchful care until the fruit is safely off and the best market price in cash is in the pocket. Of all the shortcomings of the orchardist, says "T. L. K." in a transatlantic contemporary, there is none just now so prominent as poor marketing. The Apple has come to be a standard agricultural product, both for home consumption and foreign markets, and the Apple dealers commence early in the season and canvass the Apple sections from month to month, making careful estimates until Apple picking, when they are perfectly posted on the quantity and quality of the crop, as well as to foreign demand. This should be, and might be as thoroughly understood by the well-read orchardist as by the dealer; and when this part of the business is understood, the orchardist can put a price on his fruit, as well as to wait for the dealer to make a quotation for him.

— **YOUNG PINES AND FOREST FIRES.**—Young long-leaf Pines, according to Mr. Pinchot of the U.S. Department of Agriculture, protect themselves against forest fires in a most interesting and remarkable manner. For four or five years the stems of the infant trees attain a height of only as many inches above the soil. During this time their bark is extraordinarily thick, and that alone gives some protection. But in addition, the long needles spring up above the stem, and then bend over on all sides "in a green cascade which falls to the ground in a circle about the seedling." This green barrier can with difficulty be made to burn, while the shade that it casts prevents inflammable grass from growing near the protected stem. Mr. Pinchot thinks that it is owing to this peculiar system of self-protection which the Pine seedlings have developed that the growth of evergreen Oaks in Florida has been restricted in regions where fires have raged, while pure Pine forests have taken their place.

— **GAS-WATER AS A MANURE.**—About sixty years ago interesting experiments were made with gas-water or ammoniacal liquor as a manurial agent for the destruction of worms on lawns, and also for hastening the decomposition of heaps of vegetable matter. As an insecticide it was also used by diluting it with a certain proportion of water. Previously, its manurial and other properties, as indicated, were unknown, and in London it was consigned to the Thames, to the destruction of the fish. As a manure for the Brassica tribe and Grass its effects were most pronounced, care being taken to apply it at a suitable strength. If lawns are thus dressed with it, any moss would be quickly destroyed, while the verdure of the grass would be intensified, as well as the crop in weight. It made the stalks and leaves of cereals grow luxuriantly, but without sufficient stability in the former, hence requiring some other suitable element added. Sawdust saturated with the liquor quickly decomposed, and thus formed a good manure. Of late years comparatively little notice has been given to gas-water as a manure, probably owing to the subsequent wide extension of the numerous artificial manures. It would, however, be interesting to learn if gas-water is still used to any extent at the present time.—G.

METEOROLOGICAL OBSERVATIONS AT CHISWICK.

—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.		Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
			At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
			Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Dec. 1899 and Jan. 1900.			deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Sunday	31	S.W.	35.8	34.7	48.7	31.7	—	38.8	41.9	44.9	20.6
Monday	1	N.E.	37.1	36.9	50.3	29.9	0.43	37.2	41.3	44.9	20.7
Tuesday	2	S.E.	50.8	50.2	51.7	36.9	0.07	39.2	40.9	44.9	34.6
Wednesday	3	S.E.	45.1	43.0	48.1	41.2	0.16	40.2	41.5	44.7	28.2
Thursday	4	N.N.W.	42.7	40.2	42.6	40.9	0.06	41.1	41.9	44.8	33.7
Friday	5	N.N.E.	39.9	38.0	40.9	36.7	—	40.5	42.1	44.8	31.6
Saturday	6	N.E.	30.5	30.1	42.2	28.8	0.48	39.5	42.1	44.8	21.1
MEANS ..			41.7	39.0	46.4	35.2	Total 1.20	39.5	41.7	44.8	27.9

For the most part a dull dark week, with frost on three mornings. Rain fell on five days. Monday, January 1st, was an exceptionally dark, foggy day.

THE ATMOSPHERE, AND THE ATMOSPHERIC FOOD OF PLANTS.

THOUGH this all-important subject has been treated from time to time in the *Journal of Horticulture*, we do not remember its having been presented more comprehensively and clearly than in a lecture by Professor Black, published among others some time since by the New Zealand Department of Agriculture, but only received by us a few weeks ago. It is reproduced with slight abridgement as follows:—

Of the seventy elements that, in various states of combination, make up the crust of the earth, thirteen enter into the composition of plants, and may therefore be regarded as plant food. Five of these are metals—viz., potassium, sodium, calcium (the metal in lime), magnesium, and iron. The other eight are non-metallic—viz., carbon, oxygen, hydrogen, nitrogen, chlorine, sulphur, phosphorus, and silicon. Of these, carbon is supplied almost exclusively by the air; nitrogen partly by the air, but mainly from the soil. All the others are supplied by the soil and water.

The atmospheric air is a mixture of various gases, of which nitrogen and oxygen are the most abundant, making up between them more than 98 per cent. of the whole. The carbonic acid, though amounting to only about 6 parts in 10,000 by weight, is of the very highest importance to plants; and there are small quantities of ammonia, nitric acid, and nitrous acid, all containing nitrogen; and, in the air of large manufacturing towns, sulphurous acid and sulphureted hydrogen. There is, of course, also the vapour of water, which is very variable in quantity, being evidently less abundant just after a three days' heavy rain than just before such an occurrence. Besides all these, there is another gas named argon, recently discovered in the air, and comprising about $\frac{1}{100}$ th of its total volume. Disregarding the small quantities of aqueous vapour, of argon, and of carbonic acid, and the other still rarer constituents named, we may take 100 gallons of air as containing 79 gallons of nitrogen and 21 gallons of oxygen; or, if we take it by weight instead of volume, 100 tons of air contains 77 tons of nitrogen and 23 tons of oxygen.

The proportion of carbonic acid gas in the air may be stated as 4 gallons in 10,000 gallons of air, or about 6 tons in 10,000 tons of air. Small though this proportion of carbonic acid gas is, yet when the enormous quantity of atmospheric air is considered, it will be seen that the weight of this gas that rests on every acre of surface of land and sea all round the earth amounts to about 24 tons. The sources of this carbonic acid gas are varied. First, there is the breathing of animals. The exhaled air is mainly nitrogen and oxygen, but it also contains the vapour of water and about 4 per cent. of carbonic acid. It is therefore about one hundred times richer in carbonic acid gas than the inhaled air. This, therefore, is a constant and important source of the gas, as all animals of every sort and every size are busy all life long, night and day, asleep or awake, on land or in the sea or air, perpetually making carbonic acid gas. Secondly, the burning of fire is another productive source. A ton of West Coast coal in burning evolves about $2\frac{1}{2}$ tons, and the lignites from $1\frac{1}{2}$ to 2 tons, of carbonic acid. Indeed 3 lbs. of carbon in every kind of fuel produces about 11 lbs. of this gas.

There are, thirdly, small contributions from what is called the burning of limestone. In this process (in which, however, nothing is burnt but the fuel that heats the limestone) every 100 tons of pure limestone evolves 44 tons of carbonic acid gas, and leaves a residue of 56 tons of burnt lime or quicklime in the kiln. Fourthly, in the process of fermentation of the sugar in brewing, wine making, whisky, &c., 180 lbs. of sugar splits up into 92 lbs. of alcohol and 88 lbs. of carbonic acid. There are also, fifthly, notable quantities of this gas produced by the decay or oxidation of dead organic remains—the bodies of plants and animals; and there is, lastly, the most prolific source of all in the exhalations issuing from the craters and crevices of extant and extinct volcanoes, and from numerous other fissures communicating with the interior of the earth. Those that best know tell us that from this source alone there is probably seven times as much carbonic acid gas heaved into the atmosphere as there is produced by all the other sources put together. Of the atmospheric gases, taking an equal bulk of each, carbonic acid is the heaviest, argon next, oxygen next, and then nitrogen. The numbers representing the relative weights of these, in the order in which they are named above, are 22, 20, 16, and 14 respectively; aqueous vapour is 9, and ammonia $8\frac{1}{2}$.

If in the atmosphere these gases behaved like a mixture of liquids such as, say, mercury, water, and ether, of which the heaviest would go to the bottom, the others resting on it in the order of their specific gravity, we should have all the heavy carbonic acid settling down into the valleys and low-lying lands and plains, and covering these with a deadly pall to the depth of many feet. The waters of the oceans would in that case also dissolve a large quantity of the gas, and life on land or sea would be impossible. Such, however, is not the case, for, in obedience to the law of the diffusion of gases, all gases that do not act chemically on each other distribute themselves uniformly throughout the whole space which they jointly occupy. By the operation of this law (which is not really, though apparently, inconsistent with the law of gravitation) the carbonic acid produced at the

surface of the ground rapidly diffuses itself away up all through the atmosphere, and maintains everywhere its proportion of about 4 gallons in every 10,000 gallons of air.

(To be continued.)

PRUNING.

MUCH has been written on this important operation in gardening, much has been taught, and much either apparently forgotten by some performers with the knife or misunderstood. Pruning may be divided into two distinct methods, the one carried out under the cut and dried formula of "prune to a given number of buds or eyes," as if regardless of the future; the other in which thought and care for the after-growth guide the action of the operator. When there is a great amount of pruning to be done, it may be impossible to avoid a certain proportion from being carried out in a mechanical manner; yet who shall say that this machine-like method has not gone too far in many instances? It is all too frequently seen in the persistent stumping back of trees growing in rich soil, until there is nothing but a thicket of useless growth each season, instead of a crop of health-giving fruit. No trouble appears to be taken by some persons to thin-out and expose the leaves on what ought to be the main branches to the influence of light and air; yet there are thousands of trees that have no distinct main branches, but have been distorted into dense bushes, and the trimming of these into form yearly is called "pruning."

A gardener found in a new situation some old espalier Apples, which had been innocent of fruit for years. They bore heavy crops of rampant stems that had been closely cut off and burned time after time. No amount of persuasion would induce the owner to part with these treasured trees, so there was nothing for it but to make the best of them. By leaving a few of the strong shoots along the top tier of branches about 15 inches asunder, just taking off the unripened tips. The second spring afterwards, the shoots so treated were wreathed with blossom buds, and, as the weather was favourable for setting excellent fruit followed. Nor was this all. The lower branches gradually improved, as if steadily invigorated by giving the "old stagers" their heads. True the clusters of exhausted spurs were thinned, and the branches cleansed, and those that remained gave what gardeners would call a "good sprinkling" of Apples. It might have been better to have uprooted these old trees and planted young ones, but in this case as in many others the gardener was not a free agent. The owner would not hear of parting with his gnarled friends, and there they remain, and nothing that the "new" gardener did gave more pleasure than the attention he so usefully applied to the old family favourites.

This desire of owners to retain almost useless fruit-bearers in their gardens opens up another part of the subject. In the matter of Vines it would be hard to say how many vineries in this country would be made vastly more profitable if the worn-out occupants were consigned to the rubbish fire and young thrifty canes planted in their stead. But if the old Vines must perforce remain, is the best always made of them? We read from time to time of the rejuvenation of ancient Vines by the renewal of borders and such-like commendable means, but cases are not at all rare where the stereotyped habit of pruning to a certain number of buds at the base of the current season's growth is continued. The same decrepit rods remain year after year, their curled and twisted spurs weakening accordingly, some dying, others dwindling until they have scarcely strength with which to start into growth. Would it not be better to vary the procedure for a time, by pruning to some of the best buds on the lateral shoots, and also by starting young canes from the base, so that these might afterwards take the place of the veterans, which could be gradually cut out to make room for them? I am convinced that better crops of Grapes of finer quality might be obtained by carrying out these simple methods.

Returning to outdoor fruits, experience has proved conclusively that decided advantages are gained by keeping these thinly disposed, the removal of worn out branches, and inducing new ones to replace them. Take the case of Peaches on walls. I have seen old trees condemned, yet by careful treatment in this manner they have been made to render a good account of themselves for a number of years. I have also in mind a number of large Apple trees which were benefited in the same way, these, after a time, producing fruit which could not be regarded as discreditable if produced by much younger trees. I should like to uproot many old trees and plant young, also to have new ranges of vineries to plant, but have no such privilege. In the meantime, I try to make the best of what is obsolete, and remain—SUBMERGED.

ACACIA PUBESCENS.—There appears to be a slightly increased interest in the beautiful section of Acacias that are suitable for greenhouse culture, and this is one of the best of them. Foliage and flowers are alike extremely graceful, and it rapidly makes fine specimens. The flowers are produced in the earliest months of the year, and growth starts soon after. Quite a cool greenhouse with ample root moisture suits it well, and for the sake of making room, as well as the health of the plants, they may be stood outside from the end of May until October. Under these very simple conditions this useful plant thrives admirably.—B. S. E.



ANGRÆCUM PELLUCIDUM.

THIS is one of the Orchids one would like to see more plentiful, its beautiful flowers on the long pendulous leaves being quite distinct, and having a transparent appearance that called forth a very vigorous encomium from Dr. Lindley, who, according to Messrs. Veitch, remarked of this Orchid that "its flowers were as delicate and transparent as if they were flakes of snow fixed by frost in the very act of melting." The plant likes a hot, moist, and shady house, and, like most others of its kind, must never be dried at the roots. Small baskets and a compost of sphagnum moss and crocks suit it best.

CYPRIPEDIUMS.

No time should be lost in repotting any of the early winter flowering section that have passed their best. The plants, it should be noted, are usually growing more or less freely at the time the flowers are open, and soon take with a will to the new compost. This may consist of about equal portions of peat fibre, loam, and chopped moss, and a little limestone has been found by many cultivators to be advantageous when dealing with the *C. bellatulum* section. For the strong growers large pots may be used, and the roots should be well spread out, working the compost down between them, and watering soon after.

ONCIDIUM UNDULATUM.

The majority of this genus have flowers mostly yellow, though in some cases there are lovely combinations of other tints, and there is sufficient variety of form to prevent any likelihood of a charge of sameness being brought against them, a variety of colour is also desirable. This is found in the pretty species above named, rich tints of plum purple, brown and chocolate, with a little yellow or white on the petals being usual. It produces fine twining spikes in the way of those of *O. macranthum* from the centre of the young growth. It cannot be called a difficult Orchid to grow, but, like all in this section, must be kept cool and moist.

It has the habit of pushing one pseudo-bulb well above the last node, and when this begins to root the roots are, of course, considerably above the surface of the compost, rendering them an easy prey to slugs. If any of these are present the roots must be covered with a little new compost; or, better still, this may be placed about the pseudo-bulbs just before they begin to root. Naturally a strong-rooting kind, the pots must be fairly large, thoroughly drained, and the compost be rough and open. During the season of active growth a very large amount of moisture is needed, and while the spikes are forming these should be carefully protected from injury.

RESTING ORCHIDS.

What a sad misnomer is this term in many cases. With the idea of resting their plants, many cultivators are still in the habit of almost entirely cutting off the water supply, and allowing them to get into a more or less attenuated and shrivelled condition, that takes many weeks of attentive culture to set right again. Generalities are not always convincing, and I will mention a few plants that are often much overdried.

First there is the labiata section of Cattleyas. It is a mistake to think that because no outward signs of growth are apparent, that therefore none is going on. The flowers are forming in embryo, and the plumping of the basal buds is not by any means completed when the pseudo-bulbs finish swelling in summer and autumn; yet almost before they are finished the water supply is suddenly cut off, and the flowers are starved in the very earliest stages. I think I am not far wrong in saying that these lovely Orchids in the majority of instances are very much underwatered in autumn, and in the endeavour to plump them again are overwatered in spring. This often leads to the damping of new growths, which naturally have not the same stamina as those from plants that have not been allowed to shrivel.

In a less marked manner the same thing happens to Dendrobiums, especially those of an evergreen character. The deciduous kinds, if properly finished and ripened in autumn, can hardly be kept too dry at the roots from the time the last leaf falls until they are re-introduced to their growing quarters. The well known *Odontoglossum citrosum*, again, is best quite dry in winter, this being one of the few kinds that may be allowed to shrivel with impunity. But no other member of the genus will stand such treatment, though almost every one likes a resting season of longer or shorter duration.

The long dry season various Orchids have to pass through in their native habitats is advanced as an argument in favour of similar

treatment being accorded them under cultivation, but this theory is not altogether a good one. All plants of a Vanda-like habit, or nearly all, have to put up with far drier conditions of climate when growing wild than they are found to like at home in our houses, and many other instances might be cited. Plants have not the choice of their own growing quarters, and if by observation of their likes and dislikes we can improve these wildings it is far better than following Nature too implicitly.—H. R. R.

NOTES ON DENDROBIUMS.

CONTINUING my remarks on Dendrobiums from page 16, I may say that other kinds that will thrive with spectacle are *Hodgkinsoni*, one of Messrs. F. Sander & Co.'s recent introductions, and *Johnsonia*, which takes a very long rest. *D. amboinense* is a very remarkable plant that produces at various times of the year flowers which only remain fresh for a day or two, and it is for this reason we have never been able to exhibit it before the Orchid Committee of the Royal Horticultural Society. It was discovered by Henshall in Amboyna, and was flowered by Messrs. Rollisson at Tooting in 1856. Messrs. F. Sander & Co. imported a few plants about seven or eight years ago, one of which came under my care. We found it very difficult to grow satisfactorily. All the above, except *amboinense*, will stand fog.

Other useful New Guinea and Australian Dendrobes for autumn and winter flowering, that require similar treatment, are *bigibbum* (grand for Christmas), *canaliculatum*, *Phalaenopsis*, *stratiotes*, and *undulatum*. The flowers of the latter remain fresh for over three months. Most of the Indian Orchids, especially the Moulmein and Burmah species, require a long rest in a dry airy house to induce them to flower; but those enumerated must never be allowed to become dust dry.—F. J. THORNE.

AQUILEGIAS.

THE Aquilegas (fig. 5), or as they are more commonly called, "Columbines," are among the most useful and beautiful plants for adorning our gardens during the early summer months. They possess an elegance which only needs to be seen to be fully appreciated, especially with the long-spurred section, of which the well-known *Aquilegia chrysantha* may be regarded as typical, and which, when well established and covered with its myriads of blossoms, may take a place among the choicest perennials. These Aquilegas are easy to cultivate, and their best method of propagation is by seeds, which they yield abundantly. In the flower garden, where partial change is needed from the general run of bedding plants, the Columbines are specially adapted; and growing well in ordinary soil is only another point in their favour. They make a most pleasing bed alone, or they may with good effect be associated with annuals in the mixed border, or with some dwarf bedding plants.

It may not be altogether lost if I briefly cite some of the most showy members of the Columbine family, which by giving to each its average height and predominant colour, may tend to assist those desirous of embracing one of the most elegant groups of perennials.

A. ALPINA.

This is a showy species, growing from 1½ foot to 2 feet high and bearing showy blue flowers; a most desirable plant for the second row in the border or for the higher positions on the rockery. It succeeds well in ordinary sandy loam of good depth made fairly rich, and where possible comparatively moist. It inhabits high elevations in the European Alps, over which it is somewhat widely distributed. This must not be confounded with *A. vulgaris*, flowers of which are of a deeper purple-blue, though the characteristic distinction is in its longer stamens and larger flowers.

A. CALIFORNICA.

This is a most distinct and highly decorative species from the locality signified in its specific name, and which has, in conjunction with the yellow-flowered *chrysantha*, produced some chaste and elegant hybrids. It attains a height of 2½ feet, and produces flowers of a bright scarlet hue somewhat profusely. If only on account of its distinguishing colour it is entitled to a first place among choice hardy plants. When established it forms a compact handsome bush.

A. CHRYSANTHA.

This is one of the most showy and floriferous of all the Columbines, and one which when well established in a rich deep soil attains to a height of some 3 feet and nearly as much in diameter. It is at this stage, which under good cultivation may be reached in about three seasons, that they are admired by all who see them. There is no formality about them, but a natural grace and beauty which all may enjoy owing to their delicate and pleasing shades of colour. It is by letting them alone after being once well planted that they may be had in perfection. It is not uncommon for this

species to continue flowering for two or three months, and taking into consideration how charmingly its light golden flowers mingle with other shades of colour it at once stands forth as a valuable plant either in a cut state or for border decoration. I would not advise the planting of this species in shrubberies, for in almost every case it is sure to become crowded by stronger growers. Rather give it a good position in the open border or bed—a central

making it one of the most desirable plants for the rockery or for the front row in the border. It grows from 6 to 10 inches high, and should be planted on slightly elevated positions on an even surface. Anywhere in flower it is one of the most conspicuous of the alpine section, and inhabits the Altai Mountains. If disposed in small colonies on level surfaces of the rockery, where a good depth of sandy soil mingled with stones to keep it uniformly moist at the roots can be given it, it



FIG. 5.—AQUILEGIAS.

one if possible, where it will have ample room for free development. This species is better known than many, and is quite distinct from any other of this genus.

A. GLANDULOSA.

This is not only one of the most charming species of this genus, but it is at the same time one of the most exquisite of hardy perennials. No greater praise can be accorded it than this, and this is not more than it deserves; and the large handsome flowers, the sepals of which are of a deep rich blue, with pure white corolla,

will be found to thrive admirably. It deserves every attention, and well repays good cultivation.

A. SKINNERI.

In point of colour this is a very distinct species, the flowers being of an orange-red and slightly tipped with green at the mouth. It grows nearly or quite 3 feet high, though not so bushy or compact as some, but still very interesting and distinct; and then, apart from those above named, we find some useful plants in the form of vulgaris, both single and double. In the latter we have its double white form,

which is very useful in a cut state. *A. vulgaris caryophylloides* is also a double, and whose flowers are handsomely striped. *Witmaniana* has flowers of blue, violet, and white, and is a good useful border plant; while in *atrata* we have one of a vigorous constitution and deep reddish violet flowers. The foregoing are among the best of this very pleasing and free-flowering genus of hardy plants. There are, however, many more both of species and forms, and new varieties are continually coming in view. One of these, *grandiflora alba*, is a fine white with single flowers, good robust habit, 2 feet high, and a welcome addition to the list of good things.

A. CERULEA.

The Rocky Mountain Columbine is one of the choicest alpine which cannot be too highly recommended. Among hardy-plant, growers it is well known, and its unique beauty warmly appreciated. It grows freely in any warm sandy soil (here in passing I may remark that the Columbines as a whole object to stiff or cold soils), and grows about 18 inches high; the foliage assumes a deep glaucous hue, and is much divided. From the bushy rootstock arise the somewhat branching flower stems, on which are situate numbers of its charming blue-and-white flowers. These are erect, and display the flowers to advantage, a combination so charming in the soft blue of the sepals and pure white petals that it has been compared to "a large soft-coloured Clematis," and while I cannot discover the slightest resemblance, it must be regarded by all as one of the handsomest perennials. It flowers in early summer, and lasts a long time in perfection.

By saving a few seeds each year and sowing early in January an annual display of this charming plant may be guaranteed, and as I rest in the full belief that no one having once succeeded with it would care to be without it in future, it is deserving any care or extra attention to keep up a good supply. It is worthy of remark, however, that it is of easy culture as compared with some of the other rare species—a point considerably in its favour.—H.

SUPERIOR BLACK ALICANTE GRAPES.

I FORWARD a sample of Grapes. You will no doubt remember me writing to you two years ago under the *nom de plume* of "Young Grower," asking for advice as to the large number of stoneless berries in the Alicantes forwarded at the time. You will be pleased to hear that by carefully following your advice I have had scarcely a small berry the past two seasons, and the colour has also been better than before. It may interest you to know the number of prizes we have taken for Grapes during the five years I have had charge of the Vines.

PRIZES FOR GRAPES.

Year	1sts.	2nds.	3rds.	Total.
1895	6	7	3	16
1896	14	5	2	21
1897	11	6	4	21
1898	15	10	4	29
1899	9	14	1	24
	55	42	14	111

Also the following medals:—Two silver-gilts, one of them the "Jubilee" medal, of the N.C.S.; two silver-gilt Knightians and one silver of the R.H.S.; also a silver medal at Beckenham.

The prizes were taken at ten Societies' exhibitions. Best wishes for the new year.—WM. TAYLOR, *Tewkesbury Lodge, Forest Hill.*

[We respond with warm congratulations. The Grapes were splendid in size and uniformity of berries, and especially in quality. We have never tasted better Alicantes, and few as good. It will do no harm to repeat the advice we gave that seems to have been helpful, and it may possibly be helpful to others. It was given under the heading "Stoneless Grapes" as follows:—"Such splendid clusters would be highly creditable to an old grower if all the berries were the same size as one of them—namely, $4\frac{1}{4}$ inches in diameter and nearly round, or much rounder than those of Black Alicante usually are. This huge berry only contained three seeds, the majority, about half the size, containing, some two seeds, and others only one seed, while the too numerous smaller berries are seedless. As the border contains "plenty of lime rubbish," and has received in addition an annual dressing of lime, you do not think the lack of seeds is attributable to absence of lime; all the same, we should not hesitate to apply 4 ozs. of basic slag and 2 ozs. of sulphate of potash per square yard now (January), pointing lightly in. We attribute, however, the condition of the Grapes mainly to defective fertilisation. It may be that the stigmas were excessively moist at the time of pollen distribution, which we have known to occur in the case of this usually free setting variety, and especially with vigorous Vines. Pay attention to atmospheric conditions another year during the flowering period, and satisfy yourself that there is a free distribution of the pollen to not over-moist stigmas, and we think you will secure a more uniform set and better standard fruit."]

APPLES.

CANKER ON APPLE TREES.

I OBSERVE that "B.," writing on canker at page 12, mentions that he does not know of an instance where frost cracks have produced canker. I am not quite sure of the date, but I think it was during 1881, when intensely severe hoar frosts prevailed in Middlesex, that immense mischief was done to Apple trees in producing canker, and what I saw in some orchards, especially on rather stiff soils, were then the worst examples of canker I have ever seen anywhere.

Certainly there may be differences of opinion as to what constitutes canker, but whether these frightful cracks and eruptions in bark and wood, in large and small growths alike, were followed by the appearance of the parasite fungus *Nectria ditissima* or not, a worse form of canker than was then manifested I have never seen in any ordinary garden. Lord Suffield, King of the Pippins, and Wellington were three very dissimilar varieties of Apples, that suffered severely. The Kings were so badly hit that some died absolutely. Others recovered in a fashion after several years' pruning and attention. Wellingtons took several years to recover. Suffields became most unshapely. The burstings were not only large and deep, but under the operation of the natural products, of burst cellular tissue, spread rapidly all over the trees.

If this be not canker, may Heaven save our Apple orchards from any similar visitation, for canker is, as I have seen it in private gardens, a far less serious trouble. After all, canker is more a product of starvation than of fungoid production; and all fruit growers should realise that prevention is better than cure.

APPLES AND FROZEN WATER PIPES SPLITTING.

MY critic, H. Richards (page 13), evidently belongs to that adventurous class of persons who readily rush in where angels fear to tread. He displays incapacity to discuss a semi-scientific theory when he holds or propounds the doctrine that pipes containing water are burst by the action of the increased temperature of the water in them when a thaw takes place, and not by the action of frost converting the water into solid ice. Did he ever hear of the conversion of cold water in pipes into warm water bursting them? Did he never hear of the enormous force which water, expanding under the influence of frost, can exercise? Can it be possible that he has no knowledge of a simple elementary fact—viz., that it is the water in the pipes which, under the action of frost, becomes converted into ice, and thus exercises such an immense force on the pipes as to burst them? Surely that little fact in hydraulics is known to every school child.

Does he suggest that when plants in pots standing outdoors in the winter become frozen so hard that the pots crack, that such occurrence is due to the expansion of water in the soil in the pots by a thaw? Again, can he be ignorant of the elementary fact that the great object in exposing wet clays to the action of frost by ridging them is to enable the frost to expand the water contained in the soil, thus splitting open the previously compact soil, and after a thaw not only enabling the water to percolate away, but also to allow air to follow it, and thus to sweeten and dry the soil? Scores of similar illustrations if needed could be furnished to show that water expands materially under the influence of cold, and exercises a potent force that inexperienced people taking effect for cause have wrongly ascribed to thaw.

If any one wants special and very unpleasant experience of the enormously expansive power of ice, let them spend a winter in a ship in the arctic regions, and when they have seen the sides of the ship crushed in by ice or the water expanded by frost they would soon have enough of it.

My little suggestion in relation to the cause of the splitting in stored Apples was a very humble one, one and by no means didactic. It was based on the well understood scientific fact that water in great cold expands, and it was not impossible that sap in Apples might prove to be the same.—A. D.

SPLITTING OF APPLES.

MR. H. RICHARDS (page 13) is rather badly adrift in his endeavour to destroy a theory with regard to the principles of heat and cold. Some years ago I was taught that frost and not thaw was responsible for burst pipes, and practical proofs of the matter can be found in the fact that pipes that hold boiling water with impunity break with melted ice, that cold water is found at the bottom of the pond but ice floats on the service, and in the excellent definition of your print which is due to the fact that "type" is larger when it is cold than when it is hot.

The exact value of "things" as an argument has not apparently entered into "H. Richards'" calculations. Possibly had he laid the fault of the burst pipes to the swelling ice instead of the shrinking water he would be nearer the mark in such cases as he describes, but I am not going into theory manufacture. Let "H. R." fill a bottle with water, wire down the cork, and stand it out in a hard frost. It may be mysterious, but he will find flight more fascinating than approach. It is a good old truism that circumstances alter cases—even of bottles bursting.—RET RAILL.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JANUARY 9TH.

THE Drill Hall, on this the occasion of the first show of 1900, did not present a particularly attractive appearance. Fruit was practically *non est*. Orchids, however, were fairly numerous, and of a most interesting character. The only exhibit of striking individuality in the floral section was the collection of Primulas from the great Reading firm of Sutton & Sons.

FRUIT.—The duties of the Fruit Committee appeared to be nil, but ultimately Mr. G. Woodward gardener to R. Leigh, Esq., Barham, exhibited dishes of Pears Doyenné d'Alençon and Passe Crasanne, both in splendid condition.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); and Messrs. O. Thomas, Chas. T. Druery, H. B. May, R. Dean, W. Howe, J. F. McLeod, R. B. Lowe, Chas. E. Pearson, Jas. Hudson, E. T. Cook, H. J. Cutbush, Geo. Gordon, Chas. E. Shea, Chas. Blick, Harry Turner, Geo. Paul, D. B. Crane, and J. Fraser.

The chief exhibit in the Hall was a large and attractive group of Primulas from Messrs. Sutton & Sons. The plants had just produced their first flower trusses to perfection; the colours were exceedingly bright and varied, while the dwarf habit of the plants left little to be desired. The single varieties of the *sinensis* section included Brilliant Rose, Sutton's Blue, a Fern-leaved variety; Sutton's Star, a white variety of the stellata section; Snowdrift, Pink Star, Crimson King, a brilliant crimson, possessing a grand habit; Reading Blue, and Rosy Queen, a delicate pink. The double varieties were remarkably fine. Carnation Flaked is a pretty form, white delicately flaked with rose; Improved Double Scarlet, a bright variety with capital foliage; Double Pink, a dwarf variety; and Double White, a free form of good habit. A few plants of The Duchess, a white single variety with a rose centre, very distinct. The exhibit was relieved with numbers of small Ferns and decorative Palms. The same firm also staged Cyclamen Salmon Queen, a pretty variety, and Cyclamen Papilio in a variety of colours (silver Flora medal).

A box of exceedingly bright Rhododendron hybrids was staged by Messrs. Jas. Veitch & Sons, Ltd., Chelsea; the flowers were particularly attractive at this season. The varieties were Princess Beatrice, a rosy fawn; Indian Chief, a bright buff; Delicatum, flesh pink; Cloth of Gold, a pale yellow; Empress, a rosy red; Princess Alexandra, white; Conqueror, red; multicolor Mrs. Heale, a charming white; and multicolor Neptune, a bright red.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, staged some vases of Mrs. Alfred Tate, the bronze sport from Etoile de Lyon, also a good yellow variety that has sported from Mrs. Alfred Tate; both should be useful for late decorative work. Messrs. W. Wells & Co., Ltd., Earlswood Nurseries, staged baskets of the new late white Chrysanthemum Letrier; the flowers are borne on stiff stalks, while the broad petals possess plenty of substance. It appears to be a good market variety; also a yellow variety, Kakor, bright in colour, with good petals. Messrs. Hugh Low & Co., Bush Hill Park, arranged a table of Cyclamen of the Papilio type.

ORCHID COMMITTEE.—Present: Harry Veitch, Esq. (in the chair); and Messrs. J. O'Brien, De B. Crawshay, H. Little, F. Sander, J. T. Gabriel, H. J. Chapman, W. H. Young, W. H. White, T. W. Bond, H. T. Pitt, J. Colman, J. Douglas, and J. G. Fowler.

Mr. W. H. Young, Orchid grower to Sir F. Wigan, Bart., Clare Lawn, East Sheen, contributed a very bright and attractive group of Orchids, in which Phalænopsis were peculiarly conspicuous. These comprised Sanderiana, Stuartiana, Schilleriana, amabilis, and grandiflora. Other Orchids included were Cypripedium insigne Wigan's var., Loeanum, Rothschildianum, Statterianum, and Marjorie; Pleurothallis Roezli, Zygocolax leopardinum Wigan's var., and Wiganianum; Lælia Gouldiana, and Odontoglossum crispum (silver Flora medal).

A small group of Orchids was shown by R. W. Richards, Esq., The Priory, Usk, Mon. There were two forms of Odontoglossum Rossi, a form of O. crispum with a much branching spike, and Cypripedium insigne, Usk Priory variety (silver Banksian medals). Messrs. B. S. Williams & Son were represented by a collection of Cypripediums, including Sallieri aureum, Loeanum superbum, villosum, insigne Maulei, nitens superbum, discolor, Williamsianum, Pitcherianum Williams' var., rubrum, insigne Fosterianum, insigne albo-marginatum, Fitchianum, Spicerianum, Measuresianum, and a seedling.

Mr. R. B. Lowe, gardener to Earl Brownlow, Ashridge, sent a magnificent plant of Cypripedium Loeanum carrying twenty-six splendidly developed flowers. Messrs. H. Low & Co., Bush Hill Park, staged Cycnches chlorochilon, Cymbidium Traceyanum, Lælia Gouldiana, Odontoglossum crispum, Cypripedium Loeanum giganteum, C. insigne Laura Kimball, a white form of Dendrobium uobile, and one or two others (silver Banksian medal).

Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, exhibited Calanthes Phoebe, rubro-oculata splendens, limatodes, limatodes rosea, porphyrea, and revertens splendens, Cypripedium fascinatam, Mormodes buccinator Rolfei, M. b. Warscewiczii, Platyclinis uncata, and Lælia anceps Loeana. Mr. E. Shill, gardener to G. W. L. Schofield, Esq., Rawtenstall, sent a couple of Cypripediums; Mr. J. Douglas Lælia Bresies; Mr. Wm. Appleton two Cypripediums; Mr. A. Chapman, gardener to Captain

Holford, Westonbirt, Tetbury, two Cypripediums; Mr. Downes, gardener to J. T. Bennet-Poë, Esq., Cheshunt, Dendrobium spectabile; Messrs. L. Linden, Brussels, Cypripediums and Odontoglossums; Mr. E. Kromer, West Croydon, Brssavola grandiflora; Mr. T. W. Swinburne, Winchcombe, Glos, Lælia Jongheana; and Messrs. Heath & Sons, Cheltenham, Cypripedium Loeanum viridis.

CERTIFICATES AND AWARDS OF MERIT.

Cypripedium Sir Redvers Buller (W. M. Appleton).—This is a cross from C. Smithi and C. insigne. It is a most handsome flower. The immense dorsal sepal has a yellowish green ground, almost obscured by lines of chocolate brown spots; it is margined with white flushed rose. The large pouch is reddish claret. The petals are claret with large brown varnished spots (first-class certificate).

Lælia anceps Loeana (W. H. White).—A pure white variety of fine form. The lip has a slight tinge of colour on the front lobe, and lemon in the throat (award of merit).

Pear Doyenné d'Alençon (G. Woodward).—A well-known variety of proved excellence (award of merit).

Primula sinensis General French (Sutton & Sons, Reading).—A double variety, good in habit and with deep crimson flowers (award of merit).

Primula sinensis (Sutton & Sons).—This well known and excellent strain received an award of merit.

Zygocolax leopardinum Wigan's var. (W. H. Young).—The sepals and petals are green and brown, and the lip is violet (award of merit).

Zygocolax Wiganiana.—This bigeneric hybrid is from Zygopetalum intermedium and Colax jugosus. The sepals and petals are green barred bright brown, and the lip is white, with violet markings (award of merit).

NOTES ON FIGS.

EARLY FORCED TREES IN POTS.—The temperature should now, for trees started in November, be increased to 60° at night, and 65° by day by artificial means, 70° to 75° with sun heat, commencing to ventilate at 70°, closing at 75°, and if the temperature rise 5° to 10° it will be an advantage, provided it is due to sun heat. Avoid, however, a high temperature by artificial means, for it tends to attenuate and weaken the growths, and this is unfavourable to the first and second crops of fruit. The sturdier and shorter-jointed the young shoots can be kept the greater the chances of a satisfactory early crop. Syringe the house and trees twice a day, in the morning and again at closing in bright weather; but when dull sprinkle the floor, pit sides, and walls, as a saturated atmosphere at such times is unfavourable to a sturdy fruitful habit.

As the fermenting material settles firmly about the pots add fresh leaves, bringing them nearer to the rims, taking care that the heat about the pots does not exceed 70° to 75°. Water the trees as required with liquid manure, always before the soil becomes dry. Neglect of water for once only will cause the entire collapse of the first crop. Place some turves about 2 inches thick, grass side downwards, on, round, and over the rims of the pots, extending a couple of inches on the inside and outside, filling the circular dish with rich compost. Sprinkle a little fertiliser on the turves; surface dressing occasionally, and water the turves with liquid manure so as to keep them moist. Stop the growth at the fifth leaf, especially if necessary for inducing a bushy habit, but avoid crowding the trees with growth and foliage that cannot receive plenty of light.

PLANTED-OUT FIG TREES TO RIPEN THE FRUIT IN MAY.—The house containing the planted-out trees for this purpose would be started at the new year, or, if not, there must be no further delay in setting the house to work. The border will probably require repeated waterings to moisten it thoroughly through to the drainage. Avoid, however, making the soil sodden and sour or even very wet, as only moderate moisture is required in the early stages. The surface of the border may then be covered with about 2 inches thickness of turfy loam and decayed manure in equal parts, with one-sixth of old mortar rubbish added. The roots will extend from the collar into this, especially if the mulch be rather thicker there. This will favour surface-rooting, and it will be still further accelerated and growth sustained, both in the wood and fruit, by the application of some approved fertiliser.

The surfaces of the house and trees will require an occasional syringing, but avoid damping the trees in very dull weather, yet maintain a genial condition of the atmosphere by sprinkling the pathways and borders when they become dry. Maintain a night temperature of 50°, 55° from fire heat by day, and from 60° to 65° with sun heat, ventilating freely from that temperature, and losing no opportunity or effecting a change of air daily.—GROWER.

CAMELLIA BUDS FALLING.—In my opinion, the cause of this trouble is often dryness at the roots, the risk of which is greatly lessened by plunging the pots in beds of coal ashes. Since we adopted this plan we have had scarcely a bud drop, though the structure in which the plants are housed is often heated far beyond the requirements of Camellias owing to the presence of other occupants. Were this plan generally adopted as far as practicable, I think we should hear less of this trouble.—S. X.

LIVERPOOL NOTES.

HIGHFIELD, WOOLTON.

WHAT pleasanter time can be spent than one gets in visiting Mr. George Haigh, the practical gardener to Sir W. H. Tate, Bart. Sir William, too, takes the keenest interest in his splendid collection of plants, the houses being of the most approved style. In the matter of attention to his workmen's comforts he stands out prominently, and no better criterion can be arrived at than the excellent opinions of past and present workers on the estate.

Orchids are without doubt splendidly grown, the choice stock (just going out of flower) of some hundred plants of the popular *Cattleya labiata* betokening extra good culture. *Lælia superbiens*, that excellent lasting Orchid, was abundantly flowered, and those with weakly plants

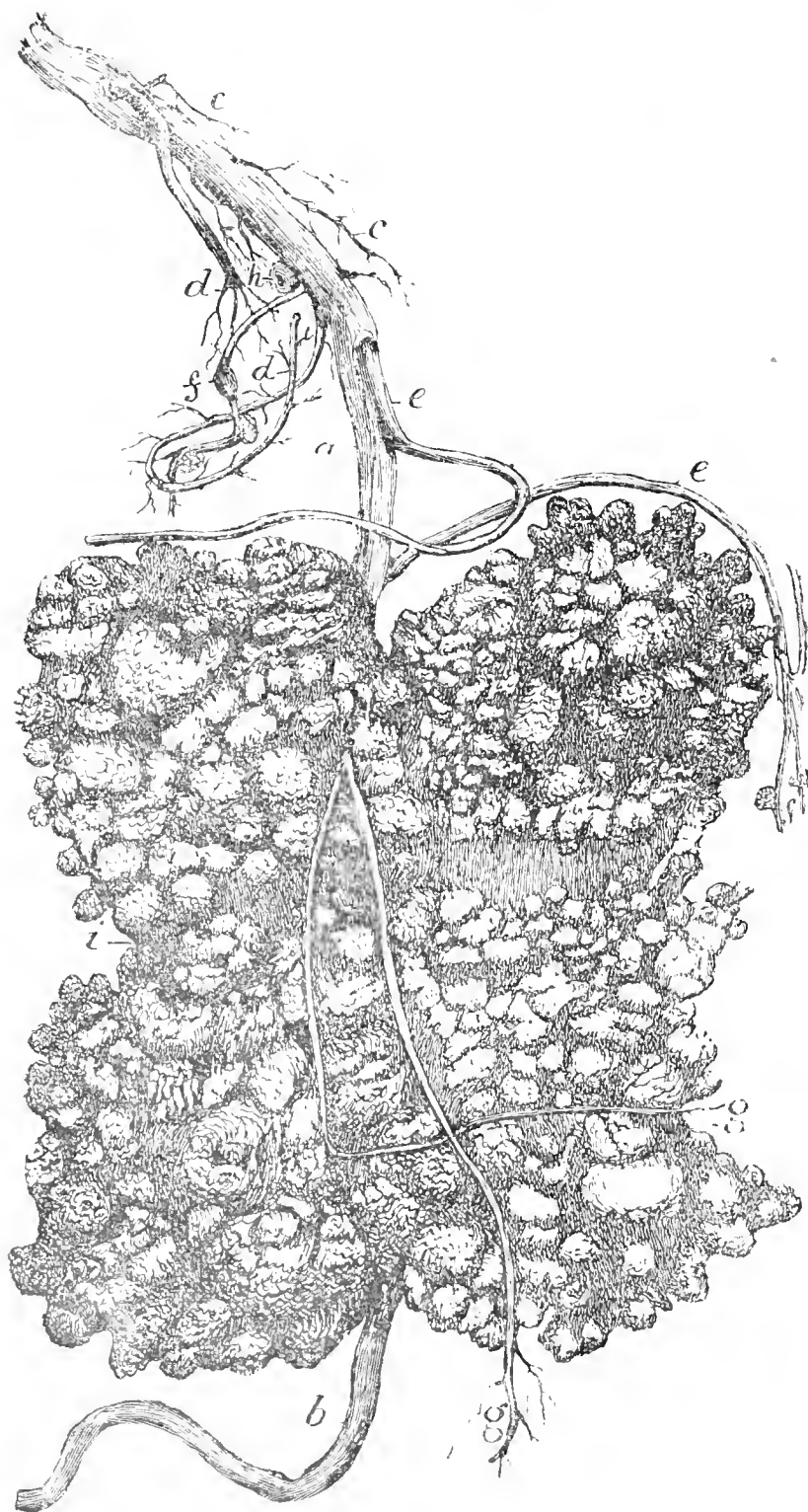


FIG. 6.—EXCRESCENCE ON APPLE TREE ROOT ($\frac{2}{3}$ NATURAL SIZE).

References: *a*, Normal condition of root above the excrescence; *b*, clean state of root below the swelling; *c*, small fibres; *d*, healthy fibrelets on roots; *e*, fibreless roots; *f*, swellings on roots; *g*, fibres at ends of long small roots; *h*, small protuberance on main root; *i*, division in excrescence.

will do well to follow Mr. Haigh's advice and not let such flower, as it only increases the evil. I had sufficient testimony adduced as to the value of such a system by many plants brought under my notice, and, as in everything else, a sound constitution is the mainstay for future flowering.

Oncidium Forbesi, richest of brown shades, was well flowered, with odd plants of *Cattleya Harrisoniae*, delicate in colour at this season, and much appreciated. Fine forms of *Lælia anceps* were open and unfolding. The *Lælia purpurata*, which London travellers know so well, are wonderfully strong in bulb and root, the majority having been divided this season; these with huge spikes of *Oncidium macranthum* wrapped round and round their tall stakes will give me something well worth talking about in a later note.

Odontoglossum vexillarium puzzled Mr. Haigh greatly, but the

difficulty has been thoroughly overcome by finding suitable houses. Cool Orchids find a congenial home in an excavated pit leading from the fernery. A useful stock of Poinsettias, mixed with a capital selection of stove plants, added brightness on a wintry day. A few Chrysanthemums, in which Niveus played a great part, were what were left of a show that has been greatly admired.

And for a close to this short note, may I make one brief allusion to *Masdevallia tovarensis*? Most people see so little in these smaller flowering Orchids against the grandeur of the larger flowers; but I should be quite outside myself did I fail to admire and to add a special word on the charming row of plants I saw in full bloom, the pure white and quaintly beautiful flowers and short dark green leaves being an unqualified success as they stood, or when used for varied floral work.

DOVE PARK, WOOLTON.

I must be excused if I extol the richly flowered Poinsettia somewhat more than is usually the case, but I never saw such excellent results as have been achieved this season by Mr. Carling, the esteemed gardener to Mrs. Cope. There were altogether about one hundred plants in pots from 5 to 7 inches in diameter, the dwarf condition making them all the more valuable. Old and young plants are included, with leaves level to the pots. I am not one to argue the point, when so good a collection is brought together, as to the size of bracts, but a few measured at random gave from 15 to 20 inches, which will give an idea of quality.

I was particular to inquire as to how Mr. Carling kept his plants so dwarf, and he informed me that he never removed them from the frames which they occupy during the summer until the growth is finished and bracts just set, the latter responding freely when placed in heat. He is of opinion that tall ungainly plants are seen through being placed in heat too early.

Bouvardias also are a specialty, and few persons grow them better. Double Bouvardias are not much grown, the grace and elegance of the single varieties, such as *Vreelandi*, *Priory Beauty*, and *President Cleveland*, being of intrinsic value and merit. The fernery is handsome and as fresh as summer, while the large stove furnishes many pleasing features. *Zygopetalum Mackayi* was well flowered; and the outside grounds, varied and extensive, must (I am told) be visited in spring when Daffodils in thousands greet the eye.—R. P. R.

EXCRESCENCE ON APPLE TREE ROOT.

THE growth of the Apple tree root submitted by "C. W., Weybridge," and shown in the illustration, fig. 6, was 5 inches in depth by $4\frac{1}{2}$ inches in diameter and very remarkable. It weighed, free from soil and as figured, 1 lb. 2 ozs. The appearance was that of a series of unnatural protuberances super-imposed, the wart-like prominences being quite clear looking and healthy. The root was normal above, *a*, and below the swelling, *b*, but there was a strange deficiency of fibres. Some of these were small, *c*; others possessed the characteristic fibrelets of the Paradise stock roots, *d*, while some rootlets were fibreless, *e*, and others again had outgrowths on them, *f*. A root issuing from the mass had no fibres except at the extremities of the forked part, *g*. A small protuberance was present on the main root at *h*.

Beyond a sort of division in the excrescence at *i*, there was nothing to indicate the origination of the preternatural growth. It seemed strange if it had arisen from the clean-looking Apple tree root, and not much less so if it was from some other root. The clean-looking Apple tree root had apparently gone through the mass from *a* to *b*. To ascertain this definitely the excrescence was broken up carefully, and the facts now to be referred to demonstrated.

The excrescence was easily broken into four parts, one break transversely at *i*, and each of the divisions thus made vertically in line with the root. It was then seen that the root was forked (fig. 7, *j*) about an inch within the excrescence, and one of the roots thus divided had gone through the lower part of the protuberance, this having grown over and enclosed it. The root was as clean within as without the excrescence, and in no way connected, or even contracted or distorted or deviated from a straight course. A slight scar was present at the point *k*, such as occurs when a fibrelet has been broken off. A side root from it near the fork was a mere stub, and swollen at the extremity, *l*. The root shown on the face of the excrescence in fig. 6 had sprung from the main root at the point *m*, and appeared to have been grown over and partly enclosed, as a too tight ligature round a branch is, by bark and wood.

The other main root ramification or branch, *n*, had come to grief, having been arrested in its growth downward at the point *o*, and in consequence pushed outgrowths of cellular tissue resulting in the excrescence. The only part of woody tissue was that represented in the figure, the remainder of the protuberance being of the character of bark, not unlike that of burrs, hard and knot-like, such as occur on the branches of the Burr-knot Apple tree.

What caused the unnatural protuberance? Unquestionably it had a small beginning, and commenced growing when the root was young, being visible only as a pinhead-like speck on a small root. Some such beginnings are shown in fig. 6, at *f*. Look at the excrescence hundreds of times larger, and notice that its extreme points are precisely similar

to the warts on the small root fibres. Go further with the investigation, and pare off the tip of a protuberance on the large excrescence, and that of a wart on the small root. Compare the tissues, and note that the two have an exactly similar formation. Then take a rather large slice of the unnatural growth, and observe how beautiful the tissue is to the naked eye. A portion of such is shown in fig. 8, at A. It is matchlessly ingrained with gold in silver. The graining in the figure represents the golden colour, and the white the silvery tissue of the Apple tree, while the black marks show the partings between the warts of the protuberance. It is also desirable to note that the gold is always within the silver, and also to observe that the part of the excrescence is joined to the main body by a stem, *p*, just as the preternatural growth itself is affixed on the root of the Apple tree.

A bit of a protuberance enlarged six diameters is figured at B, showing three growing points, *q*, and also a non-protuberancing part, *r*. The cortex (bark) is seen to be dark brown in colour, and more or less granulated, and within appears cellular tissue, indicated by white, is a graining of gold colour represented by wavy lines.

What mean the gold in the silver tissues of the Apple tree root? Excitants of growth—bodies exploiting the host. If so they cannot be symbiotic, that is, leading together a common life for their mutual benefit, for there is no evidence of a reciprocity of services, but of rank parasitism—a drawing away of the growth and nutrition of the Apple tree to serve the ends of the parasite. What is it? Examination of the cells of an active or growing point of a protuberance with the microscope reveals a faintly yellow stain analogous to that of the body found in clubbed cells of a Cabbage plant root. The protuberance cells are very thick-walled, one shown at C, enlarged 260 diameters, showing the protoplasm, *s*, yellowish body, *t*, and nucleus of the Apple, *u*. A bit of the yellowish substance under a lens enlarging 1040 diameters, brings into view the amoeba-like body represented at D, which also shows a nucleus, *v*. It has not a protective wall, but is simply naked protoplasm, and accords with a similar organism found in the cells of protuberances on Alder roots, and named by Möll *Plasmodiophora Alni*.

On an apparently dead portion of the protuberance were found, on the dry part, bodies of a roundish oval form, one shown at E, and on the moist portion the organism represented at F. Possibly the first is a cyst of some species of Myxomycete or slime fungus, and the latter bacteroides, though more likely bacteria. In no instance were either the early or later stages of the bacteroides found in the living cells, nor any bacteria; but in every one of the cells of the protuberance examined was found the gold ever within the silver, and undoubtedly the cause of the remarkable excrescence.—G. ABBEY.

[The soil where the clubbing of the Apple tree roots occurs is very sandy, and appears to be infested with what is known as slime fungus, *Plasmodiophora Brassicae*. Fruit is grown with difficulty, but Scotch Firs thrive in the district. Will the slime fungus attack Apple tree roots or give rise to another form that will? In recent years Potatoes have been infested by a parasite producing preternatural outgrowths from the tubers or underground stems, as figured and described in the *Journal of Horticulture*, December 15th, 1898, page 463. In that case, as in the present one of attack of Apple tree roots, the parasite

produces a dry, not a wet, gangrene, and hence dissimilar in effect to *Plasmodiophora Brassicae*, which causes speedy decay of Cabbages and Turnips. What is best for such land cannot always be obtained. If it was ours we should like to give it a dressing of clay marl, half to a cartload per rod, spread the lumps evenly on the surface, and leave them for the weather to scatter, then dig in, taking small spits so as to mix as much as possible. Failing the marl we should prefer a similar dressing of chalk treated in the same way. Gas lime, 1 cwt. per rod, spread evenly on the surface of vacant land, leaving it there for a month or six weeks and then dig in, would act beneficially. The gas lime must not be used on ground occupied with fruit trees or other vegetation, and it should be fresh from gas works to thoroughly disinfect the land. Stale gas lime will not kill parasites nearly so effectively, though useful in preventing club-root. Basic slag and kainit, about 8 lb. of the former and 2 lb. of the latter per rod, applied now would be good for fruit trees and crops in such soil, as would salt and soot in the spring; but nothing that may be applied can cause such extraordinary protuberances on fruit tree roots to disappear.]

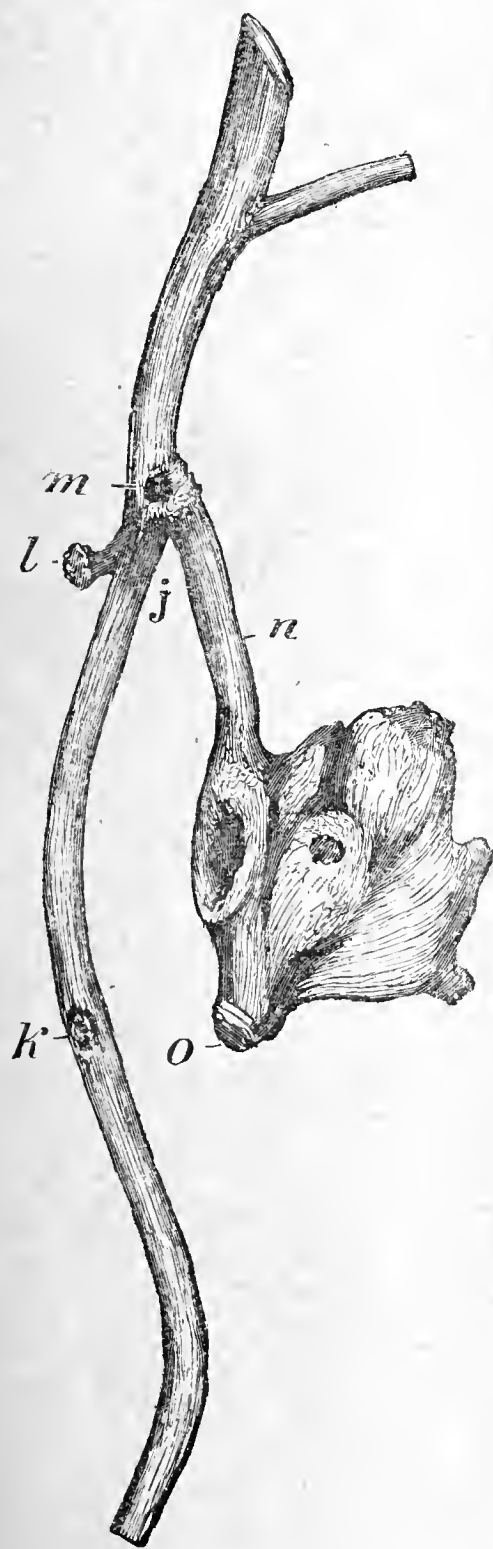


FIG. 7.
PORTION OF ROOT AFTER REMOVING
EXCRESCENCE (NATURAL SIZE).

References: *j*, Fork of root in excrescence; *k*, scar on clean root; *l*, root stub with swollen end; *m*, point of springing of small root shown on face of excrescence; *n*, branch of root bearing excrescence; *o*, point of arrested growth.

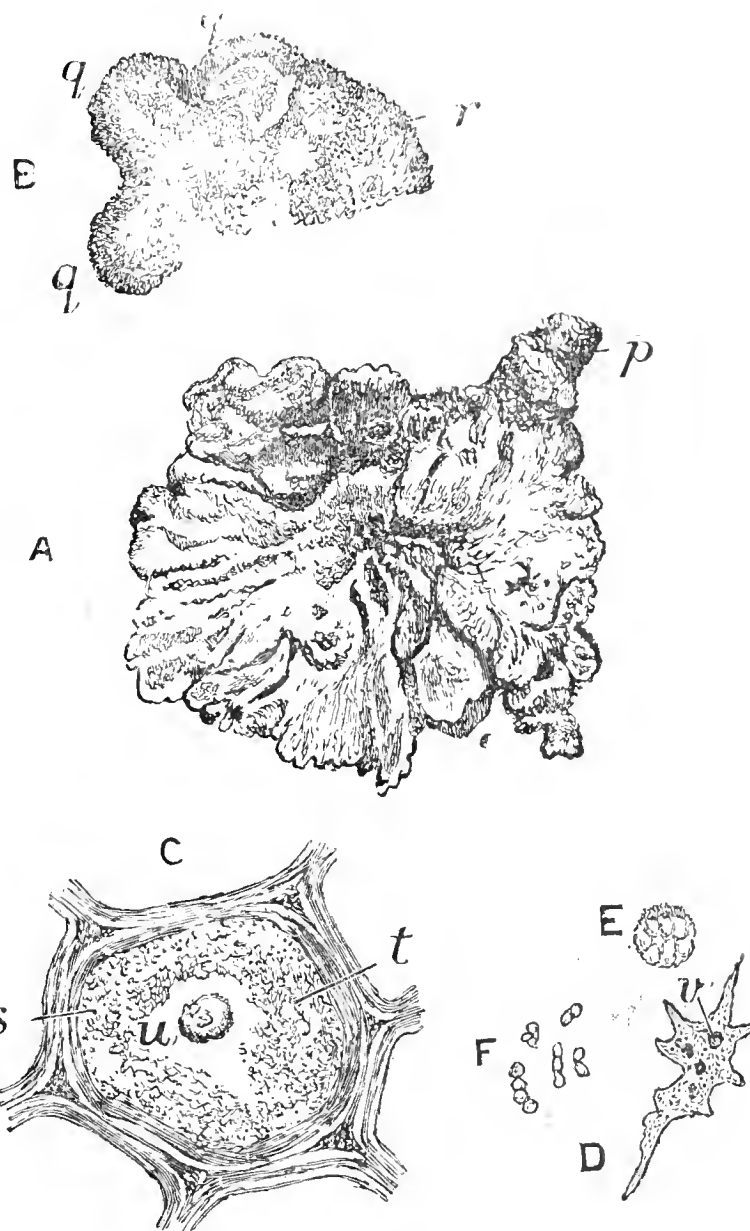


FIG. 8.—SECTIONS OF ROOT EXCRESCENCE.

A, Section of a portion of protuberance; *p*, stem of a swelling (natural size); B, portion of excrescence (enlarged 6 diameters); *q*, growing points; *r*, stationary part; C, cell of root protuberance (enlarged 260 diameters); *s*, protoplasm; *t*, yellowish body; *u*, nucleus of Apple; D, amoeba-like body found in apparently living cell (enlarged 1040 diameters); *v*, nucleus of body; E, cyst found in dry portion of tissue; F, bodies existing in moist dead tissues.

produces a dry, not a wet, gangrene, and hence dissimilar in effect to *Plasmodiophora Brassicae*, which causes speedy decay of Cabbages and Turnips. What is best for such land cannot always be obtained. If it was ours we should like to give it a dressing of clay marl, half to a cartload per rod, spread the lumps evenly on the surface, and leave them for the weather to scatter, then dig in, taking small spits so as to mix as much as possible. Failing the marl we should prefer a similar dressing of chalk treated in the same way. Gas lime, 1 cwt. per rod, spread evenly on the surface of vacant land, leaving it there for a month or six weeks and then dig in, would act beneficially. The gas lime must not be used on ground occupied with fruit trees or other vegetation, and it should be fresh from gas works to thoroughly disinfect the land. Stale gas lime will not kill parasites nearly so effectively, though useful in preventing club-root. Basic slag and kainit, about 8 lb. of the former and 2 lb. of the latter per rod, applied now would be good for fruit trees and crops in such soil, as would salt and soot in the spring; but nothing that may be applied can cause such extraordinary protuberances on fruit tree roots to disappear.]

POISON IN LILY OF THE VALLEY.—It seems as though a sprite of vindictive activity is ever whispering into the ear of the investigator. One after another some of our best favoured plants are overhauled and marked dangerous. Everyone will recall the rumpus raised over *Primula obconica*, which has actually resulted in a much lessened cultivation of that charming Primrose. It is true, of course, that the plant did irritate some who handled it, but it is far from generally poisonous, and fully merits more encouragement. And now the latest. A German chemist claims the Lily of the Valley to conceal a most virulent poison—prussic acid—to which indeed he attributes in a large degree the characteristic odour of the flower. Not only is the flower full of poison, but the stalks, too! The attention of this investigator was directed to the Lily of the Valley because his gardener showed all the symptoms of prussic acid poisoning after carrying in his mouth a bunch of the flowers when he had chapped lips. For all the above would not advise anyone to give up growing such a beautiful flower.—(“American Gardening.”)

THE LATE MR. HY. BROOMHEAD, F.R.H.S.

On Sunday, the 30th December, the funeral of Mr. H. Broomhead, of Sheffield, took place at the General Cemetery, where a large number of his friends assembled to pay their last tribute of respect to his memory. The chief mourners were Mrs. Broomhead (widow), Mr. Aldam Broomhead and Mr. John Broomhead (sons), Misses Nora, Kate, and Nellie Broomhead (daughters), Mr. J. Broomhead (brother), Mrs. Clayton (sister), and many personal friends, amongst whom were Mr. H. J. Jones, Lewisham. A large cross of Chrysanthemums (from the Sheffield Chrysanthemum Society) covered the coffin, and wreaths and floral devices were sent by many friends. The whole of the officials of the Sheffield Chrysanthemum Society attended the funeral, also deputations from other societies.

In the death of Mr. Broomhead Sheffield loses one of its best Chrysanthemum growers, and the Sheffield Chrysanthemum Society one of its most liberal supporters. Although he took no active part in municipal or public matters, he was well known as a liberal and active patron of floriculture. His favourite flowers were Chrysanthemums, and he introduced the Japanese section into Sheffield. Every year he obtained new varieties, and the following year every cutting or young plant not required by him was given to his friends. He was also a successful cultivator of Show and Cactus Dahlias.

For upwards of twelve years he held the position of Hon. Sec. to the Sheffield Chrysanthemum Society. In the early period of the Society's history, he for several years presented a sterling silver cup valued at sixteen guineas as a prize for cut blooms, and the following year he gave the same amount in cash in addition to other liberal prizes. On the occasion of the annual exhibitions he gave to each of the scholars of the Girls' and Boys' Charity Schools Oranges and Apples. These scholars, who are regular visitors to all the November shows, will greatly miss his kind liberality.

A few years ago he presented to the Society a large number of valuable books on horticulture and kindred sciences, which he wished to form the nucleus of a substantial library, which has been named in honour of the giver, the Broomhead Library. He was a man with a "big heart," generous in the extreme, but he did not keep a ledger account of his good actions. Everything was done in his quiet unassuming manner. He will be missed by a large circle of friends, but his good deeds and actions will live on and keep his memory green.

In January, 1891, the Society presented him with an illuminated address, a large marble timepiece, and a pair of bronzes, out of respect and regard for his great assistance and generous help in promoting the well-being of the Society.—J. H. S.

THE DAHLIA.

At the last meeting of the Kingston and District Gardeners' Society Mr. Read contributed an interesting paper on the Dahlia. The lecturer thought that this plant is seen at its best when planted in bold masses on extensive lawns, or along the back of large mixed borders; while it may be usefully employed to give colour to shrubberies. Propagation is effected in three ways—by cuttings, division of the roots, and by seeds. To obtain cuttings the old roots must be placed in 6 or 8-inch pots, removing the ends of the tubers to make them fit the pot. Plunge the receptacles in a hotbed standing at 70°, or a bed of soil may be placed on the front of an early viery, and the roots laid on it and covered with soil, leaving the crowns exposed.

Shoots will appear in about ten days, and this is the time to give a thorough watering. When the growths are 3 inches long cut them off and throw them away, as the first shoots are coarse and hollow, and do not make such good plants as the next shoots, which are smaller but harder. Put the cuttings singly in small pots and plunge them in a hotbed at 70°. Shade heavily, but give abundance of air or the cuttings will turn black and decay. When rooted, place the stock in a cooler house, and, after a few days, put them in larger pots, using a compost of two parts of loam, one part of leaf soil, and one part of spent hotbed manure with a little sand. Return the young plants to the greenhouse, and shade for a few days until the roots have entered the new soil.

Old roots to be divided should be started in a warm greenhouse towards the end of March, and when growth has commenced separate into several pieces, each having a young shoot attached. Put these divisions into small pots, cutting large tubers to fit 48's. Keep them in a greenhouse for a time, and gradually harden and plant out at the end of May. If there is no convenience for starting them early, the roots may be planted in the garden in April, and by the time the shoots appear danger from frost will almost be past; but an inverted pot over the plant will make all secure. A rich, moderately heavy soil is the best for Dahlias. Station the plants not less than 3 feet apart, and allow only one shoot to each plant, so as to obviate the thinning of the side branches.

A mulch of manure in the summer helps to conserve moisture, and to afford a stimulant each time water is applied. Liquid manure is very good, but artificials could not be recommended, as they produce rank growth at the expense of flowers. When frost kills the plants, cut down the stem to 15 inches from the ground, lift the roots, remove all soil, and well dry the roots before storing them in a frost-proof shed or cellar; they should be hung up or placed upon shelves. Very small

roots may be stored in dry sand or ashes, but they must not be laid upon the ground, or moisture will arise and favour decay of the roots, and for this reason large roots should never be covered.—J. T. BLENCOWE.

THE YOUNG GARDENERS' DOMAIN.

FREESIAS.

FEW flowers are more popular or useful during the winter and spring months than Freesias. Although their culture is simple, there are probably more failures with them than with any other bulbous plant forced at this season. A number of bulbs may be potted at the end of July, but they must be kept quite cool in a frame and be protected from heavy rains, keeping the lights well tilted to admit plenty of air. Other bulbs should be potted towards the latter end of August and September.

After potting some growers cover the pots with ashes, others leaf soil, but in either case the material must be removed in the course of a week or two, or growth will be seriously weakened. A practice commonly adopted is to cover each pot with an inverted one. It is my belief, however, that the young growths enjoy plenty of light and air from the outset, and each bulb will grow strongly provided it was quite sound. A wet condition of the soil at any stage and too strong heat are both detrimental to the health of the plants. Bulbs in frames must be removed to cool houses as soon as frost appears, and be placed on shelves near the glass in a structure of which the night temperature is 45° to 50°, with abundance of air. Unless desired for a particular date they are best kept in cool houses until the flower spikes appear, then an intermediate one may safely be given. Flowers formed in a higher temperature are of a poor colour, and do not last so long in a cut state.

A light fibrous loam with a mixture of leaf soil, a small part of well decomposed cow manure, and some sharp sand well incorporated will suit them well, allowing proper drainage, and placing eight bulbs in a 5-inch pot. Although copious supplies of water are disastrous in the early stages of growth, frequent applications of liquid manure may be afforded after the flower trusses are formed. Attention must be given to support the spikes and grass to prevent them falling about.—F. W. G.



FRUIT FORCING.

Vines.—*Early Forced in Pots.*—When the bunches are advanced for flowering the atmosphere should be kept rather drier and warmer, and it is a good plan to brush them lightly with a camel's-hair brush when in flower so as to facilitate fertilisation. As soon as the fruit is set, attention should be given to the thinning, commencing as soon as the berries are fairly swelling, removing the smallest first, and allowing sufficient room for the berries left to swell to their full size without wedging or crushing. Water copiously with liquid manure, keeping the evaporation troughs similarly charged. Encourage growth above the fruit, yet only as much as can have full exposure to light. Surface dress the soil with short sweet manure, and when roots are emitted freely from the collar some turves may be placed on. The temperature should range from 65° to 70° at night, 70° to 75° by day, 80° to 85° from sun heat, admitting air from 75°, and closing early, so as to raise it to 85° or 90° with sun heat, damping surfaces at closing time or early in the afternoon.

Early Houses.—These will now require particular care in ventilating, so as not to admit cold draughts of air, which cripple the foliage and produce rust on the berries. Disbud when the best shows for fruit are discernible in the points of the growths, and tie the shoots down before their points touch the glass. In stopping, be guided by the space at command. Remove all superfluous bunches, overcropping being the precursor of deficiency of colour, and some say of shanking in the berries. When the flowers open, maintain a night temperature of 70° to 75° when mild, about 5° less if severe weather prevail, but insure moderate humidity in the atmosphere. Where fermenting materials have been employed in the house, do not allow the heat to decline at this critical stage, but preserve a good heap of Oak, Beech, or Spanish Chestnut leaves and stable litter in the reserve ground, to admit of a supply being obtained as required to maintain the heat of the house with regularity.

Vineries Started at the New Year.—The inside border must be brought into a thoroughly moist condition by repeated waterings or liquid manure at a temperature equal to the mean of the house. A heap of fermenting materials on the floor about 18 inches deep, turning a portion of it daily, is conducive to an even break, and favours speedy growth. Where this cannot be secured sprinkle the floors and borders in the afternoon with liquid manure.

The outside borders should be amply protected against frost, for the roots cannot derive nutriment from a frozen soil. If the roots of the Vines are entirely outside, the border should have a good supply of fermenting material; and if this may not be possible, owing to the scarcity of material, afford dry litter, or Fern or leaves, so as to modify in some measure the chilling tendency of cold rains or snow. Attend to the due protection of the stems, for if these become frozen it is likely the crop will be destroyed. Sprinkle the Vines two or three times a day in bright dry weather, occasionally only when dull. Maintain a night temperature of 50° to 55°, 60° to 65° by day, ventilating freely about 65°, and close at that point.

Late Grapes.—These are best removed to a dry room, where they will keep quite as well or better than if left on the Vines. Keep the temperature of the room at about 45°, examining the bunches occasionally for decayed berries, which must be carefully removed. The Vines should then be pruned after keeping cool for a day or two, dressing the cuts with French polish, patent knotting, or other approved preparation as a safeguard against bleeding; also thoroughly cleanse the house. Admit air freely in favourable weather, striving to give the Vines as long and complete rest as possible. If the borders are unsatisfactory lift the roots of the Vines, clear out the bad soil, rectify the drainage, and relay the roots in fresh sweet compost within 1 foot of the surface, and the fibrous ones not deeper than 3 inches. Where the Vines are planted inside, and have inside and outside borders, the renovation may be accomplished without loss of crop by renewing the former one year, and the latter the year following.

THE KITCHEN GARDEN.

Asparagus.—No vegetable is more easily forced than Asparagus. The genial moist heat of a hotbed formed of leaves and manure answers much better for forcing than the dry heat of hot-water pipes; but if hot-water pipes are available the heat should be turned on during frosty weather. The roots of lifted plants must not be unduly exposed to drying winds. When preparing for forcing cover a mild hotbed with a thin layer of rich, moist soil, on this packing the Asparagus plants closely, spreading the roots out and covering with 3 inches of fine rich soil. Keep the soil constantly moist. Form and fill successional beds according to requirements.

Kidney Beans.—From this time onward Kidney Beans in pots pay better for forcing than earlier in the winter. To be successful with them the essentials are abundance of room, heat, light, and moisture. From twenty-five to fifty 9-inch pots, each containing about six plants, form a good stock, a considerable amount of bench or shelf room being necessarily devoted to them. No advantage is derived by allowing room for top-dressings of rich compost, the plants failing to root into this, and the simpler plan of filling up the pots at the outset really answers better. Sion House, Ne Plus Ultra, or other well-tried newer varieties and new seed are recommended for forcing. Water sparingly at first; but when the plants have formed abundance of roots they require water and liquid manure, with frequent syringing to keep down red spider.

Carrots and Radishes.—The mild autumn was in favour of a late growth of Carrots, and, in addition to what resulted from sowing late, many unthinned rows have made extraordinary progress, an abundance of tender young roots being available. These keep best in the ground, but a covering of straw litter should be afforded. A supply of young roots ought, where possible, to be maintained with the aid of hotbeds and frames. Leaves, mixed with previously fermented stable manure, are suitable, as only a mild heat is needed. Form rather solid beds facing south, and not less than 3 feet deep at this early date; place shallow frames on these, inside of which more of the shorter heating material should be placed, or sufficient to raise a depth of 6 inches of light sandy soil close to the glass. Cover with lights and mats or litter, and when the soil is well warmed through, and there are no signs of overheating, sow seed thinly in shallow drills 8 inches apart. Between these form other drills for Radishes of good forcing types. Cover all the seeds with a little sifted soil. Close the frame, placing mats or litter, or both if severe frost is anticipated, over the lights. If much vapour collects in the frame push down the lights slightly.

Onions.—The exhibitor's plan of raising a number of Onion plants under glass and planting out in April is equally desirable where Onions are required for ordinary purposes. Especially is this plan of raising under glass and planting out desirable in cases where the Onion maggot is most destructive, strong early plants to a certain extent proving impervious to attacks. Sow seeds at once in boxes of fine loam, leaf soil, and Mushroom-bed refuse. Place in gentle heat of about 60° to germinate, transferring to shelves when the seedlings are well up.

Potatoes.—Quick if comparatively light crops may be had by pot culture. Short-topped early varieties are suitable for forcing, and these ought to have their first or primary sprout attached. One strong tuber is enough for each 8-inch pot for shelves, while three may be placed in each 11-inch or large pot, arranging these on light borders in houses where gentle forcing is being carried on. When filling the pots with a mixture of loam and Mushroom-bed refuse allow room for a top-dressing of soil after the sprouts are showing above the rim level. Give enough water to keep the soil uniformly moist. Time will be gained by first starting tubers that are to be forced in pits or frames in gentle heat and a moist atmosphere.

THE BEE-KEEPER.

CRYSTALLISATION OF HONEY.

The crystallisation of honey is only imperfectly understood. How is it that honey obtained one season will granulate much more readily than that produced say the previous or following year? That such is the case the majority of bee-keepers who work for run honey will have observed, although the honey has been obtained in the same district, and, so far as one can judge, from the same variety of flowers. We are inclined to think fine weather and a high temperature are the chief factors. But this will not wholly account for it. One year in our experience stands out very conspicuously in this respect—namely, the Jubilee year 1887. The weather during the honey flow in that memorable bee-keepers' year was perfect from a bee-keepers' point of view. The days were fine and bright, and the nights warm. The pastures were a mass of white Clover, there being sufficient moisture in the land to prevent the plants suffering from drought. The result was a rich harvest of honey of the best quality.

During the last week of June we extracted the honey from the supers of all our hives that were being worked for run honey. Being short of storage room we commenced bottling it the following day. We were surprised to find it had already that clouded appearance which usually precedes granulation. Within a fortnight perfect crystallisation had taken place. Since that time we have obtained honey under a variety of circumstances. Similar weather has prevailed for a short time, but granulation has not taken place so quickly.

The nearest approach to similar weather was that prevailing in the neighbourhood of our apiary early in July last year; the honey flow was at its height. Owing to the drought there was not such an abundance of white Clover, and the Limes were just bursting into bloom. The stocks were in similar condition to those mentioned above. We therefore prepared for similar results to those obtained in 1887. Although we examined our honey almost daily we found that crystallisation did not take place till quite late in the autumn, a very fine sample of honey we had on hand being quite liquid and clear at the end of November. Probably the honey obtained from the Limes would have this effect on it. Honey collected in dull and rainy seasons does not usually granulate in its early stages.

HONEY FOR MARKET.

How should run honey be placed on the market? Should it be clear and in similar condition to what it is when it comes from the hive? We are induced to ask this question, as we have found in times past that dealers preferred to have it clear and not in its granulated form, as their customers were under the impression when offered in the latter condition that it was adulterated with flour. How the latter ingredient could be mixed with the genuine honey we are unable to say. The above fact has been brought to our notice not once but many times. As granulation is one of the proofs of genuine honey we took some trouble to disprove this fallacy. We laid stress on the latter fact, and explained how easily honey may be made clear again by placing the jar containing it in hot water. So that there should be no misunderstanding on this point, the above facts are printed on our own labels, which are attached to all our jars of run honey.

What has been the result? Dealers now often inquire why the honey is not granulated, as their customers prefer it in that condition. This is a point gained, as it is a well-known fact that much of the foreign stuff sold under the name of honey had never been near a bee, or in a bee hive, and more often than otherwise is in a clear state. Thus when granulated honey in a pure state was placed on the market it was looked on with suspicion.

Honey in sections that has not been marketed should be kept in a warm dry place. They have not kept as well as usual this winter, judging from the samples to be seen in some of the shops, which were quite spoiled owing to the moisture dripping through the whole surface of the comb.—AN ENGLISH BEE-KEEPER.

BEEES IN STRAW SKEPS.

I HAVE five or six weak straw skeps and a dozen bar-framed hives. Is it possible to drive these five weak stocks into one hive, and if so when must the work be done?—S. S. W.

[Any attempt at driving the bees from straw skeps at this season would only end in disaster. Are the stocks really short of stores? It is possible to form a fairly correct opinion as to the amount of stores contained in each skep by weighing them. "S. S. W." does not mention the size of the skeps. These are made in various sizes, the majority of them being much too small for the object in view. If the skeps are 14 inches or upwards in diameter, and are filled with combs, they should weigh at this date 20 lbs., and will have sufficient stores for another three months. If the skeps are small an allowance may be made.

It is surprising the small amount of stores a weak colony of bees

will consume when wintered in a straw skep. We once experimented with a late cast which had barely half filled the skep with combs. In October there were only three combs of sealed stores the size of one's hand. Still they wintered successfully, and were not fed till the following April. They were then fed with a small amount of thin syrup daily, and increased at a rapid rate. A strong swarm came from this stock early in June, and was placed in a frame hive, fully drawn out combs being used. The weather being favourable a large surplus was stored. We mention these facts to show what an apparently weak stock in a straw skep, with careful management, will sometimes do.

If the stocks are short of stores a plentiful supply of soft candy should be given them without delay by pressing it into the feed hole at the top of the skep; some warm covering should be placed over it to prevent an escape of heat from the hive. During last autumn we examined many skeps of bees, and invariably found them well supplied with stores owing to the fine weather that prevailed in late summer. Probably the skeps mentioned above were robbed of their summer stores. When the weather is warm, say about the middle of May, the bees may be driven. We should, however, prefer transferring them to frame hives. A better plan would be to stimulate them by feeding with thin syrup as mentioned above; they would then swarm early. When the young queen, which would afterwards be reared in the skep, has become fertilised, the bees may be driven and united to the swarm after the removal of the old queen has taken place, the stocks would then be all headed by young fertile queens.—AN ENGLISH BEE-KEEPER.]



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Stocks for Apple Trees (*Amateur Apple Grower*).—The statement you quote is not correct. The Crab or wild Apple is *Pyrus malus*, a small tree, native of Britain and Europe generally. It is raised from seed, but most of the so-called Crab stocks are raised from Apple seeds obtained from the cider mills. The stock from the Apple pips we prefer to the Crab, because as a rule it produces more fibrous roots and is quite as hardy. For dwarf trees we prefer the broad-leaved English Paradise, which is freer and hardier than the French Paradise. Paradise stocks, being surface rooting, are better for shallow soils than Crab stocks, and by feeding the trees and mulching of the former they afford profitable crops of fruit. Our observations are based on practice, which is better than theory.

Treatment of Deutzias (*F. G.*).—As the young leaves turn brown at the ends, the soil has probably become soddened and sour through the constant watering. In that case it would be advisable to allow the soil to become rather dry, then turn the plant out of the pot, remove most of the old soil, and give such size of pot as will hold the roots comfortably, Deutzias being better under rather than over-potted. Provide proper drainage, and employ a compost of good turfy loam, enriched with a fourth of well decomposed cow manure, or one-third of leaf mould, with the addition of one-sixth of sharp sand. Pot rather firmly, and keep the plant in the greenhouse in the lightest position at command until the weather becomes sufficiently genial for placing it outdoors. A temperature of 45° to 50° is quite sufficient for the development of the young growths, air being given at 50°, then the advance to 65° or 70° on bright days will not do any harm, especially with ample ventilation.

Repotting Marantas (*G. H. F.*).—This operation should be carried out during the present month, so that they will have a chance of establishing themselves again before the sun has much power. If they are left till about the middle or end of the following month the sun often proves too strong for them, and they flag severely. These plants will do in the same pots for years provided the drainage is good and the soil about the roots in a sweet condition; but the liberal supplies of water needed during the growing season soon render the soil unfit for them. They unquestionably thrive best when they are repotted annually. When turned out of their pots and the drainage removed the old soil should be worked from amongst the roots by washing it out in a tank of tepid water. This necessitates the plants being allowed to drain for some hours before they can be repotted. Many of the varieties do well in a compost of fibrous loam, one-seventh of manure, charcoal broken according to the size of the plants and pots, with an addition of coarse sand. Others do better in rough peat, the fibrous portion of loam only, and charcoal in lumps. After potting plunge the plants where a night temperature of 65° can be maintained, syringe them freely, but water with great care until the roots are active. The pots should be liberally drained.

Marie Louise Violets (*E. L. M.*).—The flower buds are blanched or "greened," as usually occurs during too cold and too wet or foggy weather for their proper development. The only preventive is a more genial atmosphere, which can hardly be looked for at this season. To grow Violets with certainty of success at this time of year it is necessary to have means of affording heat, maintaining a temperature of 45° to 50°, accompanied with some air, unless very cold and when fogs prevail outdoors. Except when the weather is unusually mild there is always the danger of having the blooms in the condition yours present from November to February, the flowers being good in the early autumn and then again in the early spring. Such has been our experience, and we have grown many thousands of plants in frames. The soil is excellent, but we use rather more leaf soil—in fact, we find the Neapolitan varieties revel in it. It is used alone for potting crowns in the late summer, and the plants do splendidly well up to the light in a greenhouse with a temperature of 45° to 50°. We do not see what you can do under the circumstances, as the treatment is correct, the only fault being the weather, which will take a turn for the better in due course, and the flowers will develop properly. We failed to discover the small red specks on the under side of the leaves, which had got strewn with soil. Possibly they may have been red spider.

Unhealthy Lapagerias (*W. R. T. P.*).—There are two main reasons why these plants are often in an unsatisfactory state in pots:—1, Close, soil not sufficiently drained, and hence sour. 2, Pots so densely crowded with roots that the plants do not receive adequate support. Lapagerias usually grow best planted out in a bed at least 18 inches deep, the bottom 6 inches being of drainage, broken clinkers and charcoal being excellent, the remainder springy turfy peat and loam, twice the quantity of the former, with a liberal admixture of charcoal, the whole to be pressed down as firmly as the turfy nature of the compost permits. A bed thus prepared can scarcely be made sour, due provision being made for the free exit of water from the drainage, and when the soil is permeated with roots it is not easy to give too much water; until then water must be given more sparingly, yet the soil should never get anything like dry. If you prefer growing the plant in a pot, prepare the soil similarly. In the event of the plants not having rooted freely, it will be advisable to remove a good part of the old soil, which will be sour, and give fresh as suggested, thinning out and shortening wiry growths to the best buds you can find, syringing the plant twice or thrice a day according to the weather, to prevent excessive evaporation from the leaves, and so assist the emission of fresh healthy roots, which alone can invigorate the plants. We know of Lapagerias that grow luxuriantly and flower profusely on the north side of greenhouses.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small.

(A. B. C.).—Dutch Mignonne. (A. P.).—1, Gloria Mundi; 2, Newton Wonder; 3, Cox's Orange Pippin; 4, New Hawthornden. (A. D.).—Winter Hawthornden. (J. T. B.).—1 Ribston Pippin; 2, Northern Greening; 3, Blenheim Pippin; 4, Alfriston; 5, Warner's King; 6, Bramley's Seedling.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. H.).—1, Phoenix dactylifera; 2, Kentia Canterburyana; 3, Raphis flabelliformis; 4, Cocos Weddelliana; 5, Kentia Belmoreana. (P. P. J.).—1, Ophiopogon jaburan variegatum; 2, Selaginella Kraussiana. (S. E. D.).—1, Oncidium tigrinum; 2, O. Forbesi.

COVENT GARDEN MARKET.—JANUARY 10TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

Trade dull.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case	4 0	to 15 0
„ Canadian, barrel	10 0	15 0	Melons each	0 6	1 6
„ Nova Scotian, barrel	10 0	17 0	Oranges, per case ...	5 0	15 0
Cobnuts per 100 lb....	60 0	70 0	„ Tangierine, box...	0 6	1 9
Grapes, black	0 6	3 0	Pears, Californian, case...	6 0	9 0
„ Muscat... ..	1 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	3 0	to 4 0	Herbs, bunch	0 2	to 0 0
Asparagus, green, bundle	2 9	3 3	Leeks, bunch	0 3	0 0
„ giant, bundle	15 0	20 0	Lettuce, doz.	1 6	2 0
Beans, Jersey, per lb..	2 6	3 0	Mushrooms, lb....	0 6	0 9
„ French Kidney, lb.	0 10	0 0	Mustard and Cress, punnet	0 2	0 0
„ Madeira, basket ...	3 0	4 0	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz.	0 6	0 0	Parsley, doz. bunches	2 0	4 0
Brussels Sprouts, ½ sieve...	1 6	2 0	Potatoes, cwt.	2 0	5 0
Cabbages, per tally ...	7 0	0 0	„ Teneriffe, cwt....	18 0	28 0
Carrots, per doz.	2 0	3 0	Seakale, doz. baskets	12 0	15 0
Cauliflowers, doz.	3 0	5 0	Shallots, lb.	0 3	0 0
Celery, per bundle	1 0	1 3	Spinach, per bushel...	3 0	5 0
Cucumbers, doz.	4 0	8 0	Tomatoes, per doz. lbs.	2 0	5 0
Endive, doz.	2 6	0 0	Turnips, bunch... ..	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Lily of the Valley, 12 bun.	18 0	to 24 0
Arums	12 0	18 0	Maidenhair Fern, doz. bnch	6 0	8 0
Asparagus, Fern, bunch...	2 0	2 6	Marguerites, doz. bnchs.	3 0	4 0
Bouvardia, bunch	0 6	0 9	„ Yellow, doz. bnchs.	4 0	6 0
Carnations, 12 blooms ...	2 6	3 6	Mimosa, per bunch ...	2 6	3 6
Cattleyas, per doz.	12 0	24 0	Mignonette, doz. bunches	6 0	8 0
Christmas Roses, doz. ...	1 0	2 0	Narcissus, white, doz. bun.	2 6	6 0
Chrysanthemums, white			„ Yellow, doz. bunches	3 0	5 0
„ doz. blooms	6 0	9 0	„ double, doz. bunches	2 6	4 6
„ yellow doz. blooms	5 0	8 0	Odontoglossums	5 0	7 6
„ bunches var.	0 6	1 6	Pelargoniums, doz. bnchs	8 0	12 0
Eucharis, doz.	6 0	8 0	Poinsettias, doz.	12 0	18 0
Gardenias, doz.	6 0	8 0	Roses (indoor), doz....	6 0	8 0
Geranium, scarlet, doz.			„ Red, doz.	6 0	8 0
„ bnchs.	9 0	12 0	„ Safrano, packet ...	2 6	3 6
Hyacinth, Roman, doz. ...	8 0	10 0	„ Tea, white, doz. ...	3 6	6 0
Lilac, white, bundle ...	7 0	9 0	„ Yellow, doz. (Perles)	5 0	7 6
„ mauve, bundle	8 0	10 0	„ Maréchal Niel, doz.	6 0	12 0
Lilium Harrisii, 12 blooms	12 0	18 0	Smilax, bunch	5 0	7 6
„ lancifolium album ...	3 6	4 6	Violets, Parma, bunch ...	8 0	10 0
„ „ rubrum	3 6	4 6	„ dark, French, doz.	3 0	4 0
„ longiflorum, 12 blooms	8 0	12 0	„ „ English, doz.	3 6	4 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Roman, per pot	1 6	3 6
Orotans, doz.	18 0	30 0	Lycopodiums, doz.	3 0	6 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz.	30 0	60 0	Palms, in var., each ...	1 0	1 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens	21 0	6 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	20 0
Ferns, var., doz.	4 0	18 0	Solanums, per doz.	9 0	18 0

TRADE CATALOGUES RECEIVED.

W. Attlee Burpee, & Co., Philadelphia.—*Farm Annual*.
H. Cannell & Sons, Swanley.—*Chrysanthemums*.
J. Carter & Co., High Holborn.—*Seeds*.
J. Cheal & Sons, Crawley.—*Seeds*.
W. Clibran & Son, Altrincham.—*Seeds*.
Dicksons & Co., Waterloo Place, Edinburgh.—*Seeds and Forest and Other Trees*.
E. P. Dixon & Son, Hull.—*Seeds*.
W. Drummond & Sons, Ltd., Dawson Street, Dublin.—*Seeds*.
Fisher, Son, & Sibray, Ltd., Handsworth, Sheffield.—*Seeds*.
J. Forbes, Hawick, N.B.—*Seeds*.
W. B. Hartland, Cork.—*Seeds*.
Kelway & Sons, Langport.—*Wholesale Seed List*.
Little & Ballantyne, Carlisle.—*Seeds*.
J. R. Pearson & Sons, Chilwell, Notts.—*Seeds*.
Toogood & Sons, Southampton.—*Seeds*.
R. Veitch & Son, Exeter.—*Seeds*.
W. Wells & Co., Earlswood, Surrey.—*Chrysanthemums*.



VINTON'S ALMANAC.*

WE noticed some little time ago an excellent almanac that came under our notice, the "Live Stock Journal." It was full of improving and interesting matter, well got up, clear type, and altogether well worth the 1s., its advertised cost. Now we make the acquaintance of another equally good, though not quite so large, which is purchasable for the small sum of 6d. How it is done at the money is a puzzle; even if the writers gave their services gratis, there must be a great outlay, so we think that the circulation must be immense, or the thing could never "go" at all.

All of us, young and old, turn first to pictures, and here we find a most capital one of that well-known and popular agriculturist H.R.H. of Wales. He will not think we take a liberty when we say he looks like a typical English squire, who delights in the home farm, and is more than proud of the honours won by his exhibits in the show yard. H.R.H. has always been closely identified with the farming interest, and has shown himself always ready to support in any and every way he could this important industry. Who can calculate the long and tiring days he has spent at shows since the time he was first taken as a lad by his noble father? Hot or cold, rain or fair weather, the Prince is never absent. Not only has he thus encouraged the executive of the shows, but he has given an opportunity to many thousands of his subjects to see their future king. His Royal mother and he well earned their right to the medals, rosettes, and ribbons that have gone respectively to Windsor and Sandringham.

There is another portrait of a younger man, the scion of an old ducal house, with whose name we associate Holker Shorthorns and Shires. As the country people would say, Victor Cavendish decidedly "favours" in appearance the present head of the great race of Devonshire.

Then we find some fine live stock, the majestic Shorthorn; the elegant fairy-like Jersey Busiest Harold, the king of the Shires; the grandly formed Suffolk Pearl, Sir Walter's Danish Duke, a perfect gentleman; and the smart hackney Confident George. There are only two sheep depicted—a Southdown ram from the Prince's, and a Shropshire ram owned by Mrs. Barrs.

The papers on the different subjects are all good, and it seems invidious to pick out one. Of course we each have a natural bias, and we must allow that Professor Wrightson on Barley appeals to most of us. J. P. Sheldon will interest those who have at all studied the question of permanent pastures; he has much of value to say on the subject.

* "Gazette" Office, Ludgate Circus.

W. E. Bear tells what Parliament has done and left undone in the past session for the farmer. We have not got a great deal out of our legislators; we suppose they prefer that we work out our own salvation. This margarine question is still untouched, and though the Bill to prevent the adulteration of foods is good in itself, it by no means covers the ground it should. Poor old Ireland gets a Bill which is intended to encourage agriculture and technical education.

We see that 10,000 of the clergy will get relief to the amount of £87,000 per annum by the working of the Tithe Rent Charge (Rates) Act, and only those who know something of the poverty and difficulty of the poor parsons who derive their incomes from land can tell what this means. It will be but a trifle apiece, but it will ease the strain a little. There is a measure which is very desirable. Up to now Parish Councillors were elected annually; now each member is to sit for three years. This will do away with a good deal of silly ferment, that was quite unnecessary as an annual.

And so separated milk has had its day. "Machine skimmed" is to be the new definition. Professor Lloyd tells us that to some minds "separated" conveyed the idea of something super-excellent; and if that is the case it is as well to clear up the matter. "Machine skimmed" sounds awkward; but we are old-fashioned. There is a future for it, the Professor says, if only it be Pasteurised before sale; it is a wholesome, excellent article of diet, and invaluable for the preservation of infant life.

The management of feeding cattle is ably treated of by T. P. F. Bell. He goes into the question thoroughly, giving sensible ideas as to rations, laying great stress on cleanliness—i.e., cleanliness of body, freedom from harbles and lice, cleanliness in byres and feeding troughs, stalls, and watering places. No doubt we should hear far less of tuberculosis if all sheds and loose boxes were constantly whitewashed, and so constructed that sun and air could have free access. Mr. Bell is of the same opinion as ourselves on one matter in particular, and that is that there should be as few changes in the attendants as possible. All stock have their peculiarities, and a new man is some time before he gets to know all about a herd; and, in the meantime, his very presence disquiets them.

"The Milk Trade" is not altogether very pleasant reading to the tenant farmer. He knows full well what a business it is to keep up his proper quantity of milk, and then to find he rarely can make his way, though the town folks are paying up well. P. McConnell says there is no investment better than a good milk walk. The retail vendor gets the cream (we do not mean a pun), and there is nothing for the farmer but co-operation.

The home harvest in two periods, 1872-76, 1892-96, is full of facts and figures. Unlawful poisoning shows up curious points of law, and "centipedes and millipedes" make us feel quite creepy.

Every lover of vegetables should read Mr. Glenny on salads. If only folks would consult their stomachs and purses by eating more "green meat," how much better they would be. But English people adore solid meats. The poultry paper might, with advantage, have been longer.

The book is not yet exhausted. All sorts of official information, lists of societies and agricultural training depôts, dairy schools, fairs, markets, and tables, that we shall only be too glad to have handy for reference, and all within the covers of a sixpenny book.

WORK ON THE HOME FARM.

The frost has been of short duration, and though one night was rather severe, we hope that the Turnips will not be much the worse for it. A steady rain has well washed the roads, and done the Wheat nearly as much good as a rolling. Wheat looks well and is forward, but has never had too solid a seed bed to grow in. There must be danger from wireworm as spring approaches, unless the roll be used whenever practicable.

It is a good plan to take the roll into the Wheat field soon after Christmas, and being on the spot ready for use many opportunities may be found of using it, if only for a few hours. Suppose the horses are ploughing or harrowing in a neighbouring field, a brisk wind springs up, the surface quickly becomes dry enough for the roll; the master or foreman seeing the opportunity diverts a pair of horses to

the roll, and half a day's work is done, which must have been left altogether, or done at a less useful period.

The poultry raiser who wishes to realise good prices must have eggs already in a state of incubation. As hens are perverse creatures, and will not sit or lay simply when they are ordered, true enterprise suggests the use of the incubator. We have tried one very successfully, and are sure that it amply paid for the outlay. There are many useful types. Ours was a Hearson; and others, we are told, are equally good, but we have not tried them.

With open weather we shall commence to cross-cut the fallows. Should frost again intervene, the land will be all the better for having been moved in the interim, as it will be more open to frost influence. Strong land, however, must not be ploughed wet, or the benefit of the previous frost will have been lost. One of the chief attractions of light free-working soil to the farmer is the possibility of keeping horses at work upon it; when on strong land they must perforce remain idle.

The labour difficulty gets worse day by day, and we hear of a land agent backing up tenants in appealing to their landlord for rent reduction, and chiefly on the ground of the vastly increased labour bill. Unless there is a radical change, and that soon, further large tracts of arable land will have to be seeded down.

FIELD EXPERIMENTS WITH MANURES.

PROFESSOR J. R. Campbell, of the Yorkshire College, writing in this month's "Land Magazine," warns farmers against placing too much reliance upon the results of field experiments in the manuring of crops. For ten years past various agricultural bodies have been conducting such experiments, and the principal lesson they seem to have taught is that the whole question must for a long time remain in an experimental stage. Variations in the soil and changes in the weather make it necessary, if experiments are to be relied upon as a guide for practice, that they should be spread over a wide area and continued for a long series of years. At present, therefore, Professor Campbell thinks it useless to tabulate the results even of those experiments which seem the most conclusive; he prefers to state some of the general principles these experiments have established.

The first is the very elementary discovery that farmyard manure is the best. The farmer who uses it "can make no mistake." It contains nitrogen, phosphoric acid, and potash, and these constituents must be blended in any artificial manure that is to take the place of the natural product. No experiments were needed to establish this fact. But the question of how manure should be used is one upon which farmers are not agreed. Practice varies in different counties. Professor Campbell lays it down as an axiom that the system of manuring the root crop heavily and using no manures for the rest of the rotation is not so profitable as that of distributing the manures over the rotation. The contrary practice is sometimes recommended, but the Professor's advice is the fruit of study and experience, and to farmers he says urgently, "In all-round manuring you know you are safe. Leave these problems to experts. For yourselves, run no risks."

In the second place Professor Campbell recommends more frequent use of artificial manures to the grain crop. It is indirectly profitable, even with oats at 2s. a bushel; it produces a large crop, which loosens the soil and keeps down weeds, and a plentiful yield of straw increases next year's stock of manure. In many counties this system is extending, but Professor Campbell urges more care in the selection of the manures. "No result," he says, "has been more striking than the certainty with which an increase in the yield of the corn or grass crops has been secured by the use of nitrogenous manures, particularly quick-acting manures, such as nitrate of soda or sulphate of ammonia." It is a mistake to suppose that these are exhausting to the soil; on the contrary, they increase its fertility. Artificial mixtures often contain excessive quantities of phosphoric acid and are harmful, but plenty of nitrogen produces bulk, and bulk will produce a fine manure. Finally, experiments conducted by Professor Campbell in Yorkshire and in Scotland show that for arable crops a quick-acting manure, and for pasture a more lasting one, are best.—("Yorkshire Post.")

POULTRY AND EGGS—Almost everybody who has a little spare space, and a good many who really have not, manage to keep a few hens, and oh, how anxiously they look for a new-laid egg or two every morning now; and the look is apt mostly to be in vain. Two things are too often overlooked in regard to feeding, and that is not to supply plenty of green uncooked vegetables and enough grit. Without these neither health nor free laying need be expected. The green vegetables may consist of turnip tops, cabbage leaves, and such like, and the grit be obtained by breaking up all old crocks and glass bottles on the premises into bits not larger than grains of wheat. As a rule the birds are really overcrowded with corn and meal. Of course, it is desirable that a wide out-run be given; then the birds look after both green vegetable food and grit, but they cannot find it in the small homes many of them have to live in. Dampness and draughts, too, in any form are bad for fowls. They stop laying, bring about disease, and hinder free growth in the young birds.—("Rural World.")

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Journal of Horticulture.

THURSDAY, JANUARY 18, 1900.

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SEEDS AND SEEDLINGS.

THE near arrival of that period of the year when, with lengthening days and renewal of heat, nature begins another season's growth, reminds one that it is possible not only to aid in that work but also, unfortunately, to hinder it. It would be a gross libel on gardeners, and, indeed, on all who love a garden, to say they would knowingly do anything of the latter kind, or, on the other hand, omit help where necessary. But, allowing the truth of that, it cannot be gainsaid that all of us are apt to err frequently through want of definite knowledge and not seldom through excess of zeal. The practice of sowing seeds too thickly has been so often condemned as in every respect an evil that it may for the present be passed over without comment.

Closely allied in its bad effects, though of course not so pronounced, and, indeed, generally passing without notice, is the system of allowing seedlings to remain too long in the seed bed—in which expression pots and boxes are included—before transplanting, which, I think, is a practice than which none is more general. "Too long" is somewhat indefinite, and few will plead guilty to any such thing. Nevertheless, I am convinced the instances that occur of plants being hindered in growth by this one cause is beyond computation. The beneficial effect of transplanting seedlings while yet very small can, indeed, be comprehended fully only by experiment, when without a doubt those that are left till they have gained so-called "strength" previous to transplanting will in many instances appear for a time the better stock, but ultimately they will be left behind. Seedlings which are minute in an early stage of existence are by the inexperienced commonly allowed to remain in the seed bed far too long. Common examples that may be mentioned are Begonias, Gloxinias, Calceolarias, Pentstemons, Lobelias, Francoas, and Salpiglossis, all of which should be transplanted when yet the tiniest mites. How, remarkably, too, is the future of a Tomato plant affected by its treatment as an infant seedling, not only in earliness but also in crop.

One of the very old writers attributes the value of transplanting to be derived from the roots being broken in the process with subsequent access of new ones to lay hold on the fresh soil. The question is one worth pondering. We never dream of doubting the value of transplanting certain crops—*e.g.*, the Brassicæ, and those who cultivate Parsley by transplanting from seed beds know that it is in every respect superior to that not so treated. In the same way, transplanted early, Peas and French Beans are superior to those sown where they crop. But to return to the subject more immediately under review.

Not the least remarkable examples of the beneficial effects resulting from early transplanting are provided by monocotyledonous plants. In the case of *Amaryllis* and *Gladiolus* it is possible to lose or gain a twelvemonth in the period of flowering from this cause alone. If for example the seeds of the last named are sown in pots or in boxes in early spring and started in a little heat, but allowed to remain during the season without transplanting, treat them as carefully as one may, the corms will be small at its end. On the other hand, if the seedlings are transplanted, say in May, into the open garden, in a few weeks the little fellows will exhibit their satisfaction, and the corms when lifted show the value of the practice still more plainly. Or one might refer to any common *Dracæna*, the seedlings of which if transplanted at an early stage and duly potted, all through retain the lead of those left a little longer in the seed pan.

The practice of transplanting Onions from boxes affords another incontrovertible proof. Smaller plants placed out early certainly out-grow stronger ones allowed to remain longer in the seed boxes. Leeks provide an object lesson equally striking, and those who allow seedlings of this highly estimable vegetable to remain, for whatever reason, in the seed lines after the plants are at a proper stage to transplant, do so at a great loss of weight in the crop. Celery is a valuable crop that is frequently prejudiced solely by leaving the seedlings too long without transplanting, and perhaps more often still by allowing the transplanted stock to get too large previous to removing to the trenches.

Without educing more examples, note may be made of the value of early transplanting for another reason. The occurrence is by no means infrequent that seedlings raised under glass, and particularly when the subjects are somewhat hardy and a degree of artificial heat has been used, that great loss accrues from damping. One method of checking this is to remove to a cooler temperature, or to lower it in the structure where the plants are affected. But an infallible means of staying this plague is to transplant without any delay those seedlings which have not been attacked, and the better plan still to prick out the seedlings at so early a stage of growth that this troublesome visitation is never made.

In strict connection with what has been already indicated should be the lines of treating young seedlings, is the question of the most suitable times to sow. In not a few cases, and more particularly so with plants that are prepared for decorating the summer garden, the seeds are sown at a date that is earlier than is necessary, and the result is delay in effect through check to growth when young. There are plants, such as *Pentstemons*, *Lobelias*, and *Begonias*, which must be sown early in the year to secure a strong floriferous plant, but with rapid growing kinds, such as *Asters*, *Marigolds*, and *Sunflowers*, there is no gain from sowing early.—B.

THE WILD GARDEN.

CAN we contemplate anything that will give more effectiveness and tone to a garden, or that will produce so much beauty and pleasure, as is likely to arise from the naturalisation of such plants as will take care of themselves when planted near to the margins of shrubberies, or on lawns where the ground is never dug? We take it for granted that anyone proposing to form a wild garden will have given proper attention and consideration to the preparation of the soil by the removal of noxious weeds as much as possible, and to the providing the groundwork for the natural relief of the floral colouring a verdure of green lawn or grass.

We have seen many inquiries as to which are the best Grasses to form a lawn, have read the varied answers, and from actual trials can recommend for a good average soil a mixture in about equal proportions of *Agrostis canina*, or *Creeping Bent*; *Cynosurus cristatus*, or

Crested Dogtail; *Festuca duriuscula*, or *Hardy Fescue*; and *Poa pratense*, or *Smooth-stalked Meadow-grass*. We do not add *White Clover*, although some may say it ought to be employed. Let the seeds be sown liberally in April, but before sowing make the ground perfectly even and firm by rolling and raking. Once the greensward or lawn has been formed care must be taken not to fall into the common error of supposing that it will take care of itself. Weeds will assert themselves, and no doubt hand removal will have to be resorted to in order to extract Docks, Dandelions and Daisies, and where moss abounds the surface may require scarifying with iron rakes, re-covering with fine soil and wood ashes, and resowing with fresh seeds.

The practice of wild gardening is yet in its infancy, for the mistake is made in assuming that the mixed border is the only place suitable for hardy flowers. A properly formed and planted mixed border is a charming sight, but when the fact is recognised that this is only one out of a dozen different ways of growing hardy flowers, we begin to see the great wealth of brilliant material available for use in the wild garden in one form or another. Many of the plants are comparatively cheap to buy, easy of culture, hardy, therefore more readily adaptable to the object in view than to any other system of gardening requiring plants of tender constitutions.

We cannot lay down any hard and fast rules to form a perfect wild garden, for no two places are alike; each has its own natural surrounding. Thus we might advise a mixed border of trees and shrubs as a background, where it is needful to hide some objectionable view, while in another case the same would not be admissible. From first to last all appearances of stiffness or formality of outline, either in regard to walks, beds, or borders, should be studiously avoided; Nature should be imitated as much as possible. We cannot entirely dispense with hardy trees and shrubs, neither can we call our wild garden complete without hardy Ferns, or climbing plants festooned, or creeping and trailing plants covering the intervening ground, to enumerate only a part of which space will not permit at present, but more anon. We will for the moment confine ourselves to those plants which may be placed upon the grass portion of our plot.

Here you may produce one of the prettiest and most effective plans of gardening by naturalising patches of such plants as practically take care of themselves. What has so glorious an effect on the green carpet as the golden *Crocus* flaunting its vernal gold to herald the advent of spring, meeting the eye in all odd nooks and corners? while the white *Crocus* are far more telling than *Snowdrops*. Few spring-flowering plants can compare with the *Hepaticas*, varying in colour from a lovely pale blue to a pure white, and shading to mauve and soft pink tints. Of *Narcissus* the varieties are innumerable, and many are worthy of inclusion in the wild garden; but of them all the most deliciously fragrant and most chastely beautiful is the old common white *Narcissus poeticus*. Its beauty and sweetness need no recommendations here; we can only add that it is deserving of more extensive patronage. The common *Daffodil* is equally well known.

Where spring flowers are in request for furnishing cut flowers the charming *Scillas* provide much that may very thankfully be accepted. *Scilla sibirica* is perhaps the best as regards colour, a beautiful azure blue; while the common *Bluebell* (*S. nutans*), so abundant in groves in many parts of England, is worth naturalising, as is also the white variety, *S. n. alba*. Many beautiful and interesting *Primulas* are so fragrant, so excellent in their colouring, and flowering as they do in spring and early summer, that all lovers of flowers cannot forego them. Even the common *Primrose* is a fine object on a good lawn or grass plot. Years ago we remember seeing a large quantity planted out in this way literally covered with bloom. We feel the want of good coloured varieties of this family with the same vigour as the common *Primrose*.

Grape Hyacinths are very desirable in the wild garden. *Muscari botryoides* is well known, and deservedly a favourite with its lively blue globose clusters. We may still find *M. racemosum* in some old cottage gardens growing apparently nearly wild, for it will hold its own anywhere if only permitted to wander over the greensward growing like a weed. The highly interesting and ornamental *Irises* are easily grown, but we rarely see enough of them, and to enumerate or recommend any particular species or varieties would be superfluous, for they are so numerous and all so beautiful. Little need be said in praise of the *Snowdrop*, but still it must be added.

None of the above requires any special attention where the grass is permitted to grow until all the foliage of the bulbs and other spring plants is ripe, when it may be cut over and swept. By spring, when the flowers come up, they should stand out in bold relief amongst the short, fresh, green grass. By no means should the planting be done in driblets. Whatever quantity of bulbs it is decided to put in, plant them in recognisable patches from 1 yard to 2 yards across, and it will be found that none of our spring flowering plants in the border can compare with those grown with grass as a groundwork.—T. GEE.



CYPRIPEDIUM SIR REDVERS BULLER.

THE patriotic martial spirit that pervades members of the British Empire in all parts of the world has made its presence felt in the essentially peaceful circles of horticulture. On every hand we find new forms being named after our leaders in South Africa, and amongst the latest examples we may cite *Cypripedium Sir Redvers Buller* (fig. 9). This magnificent hybrid was exhibited at the meeting of the Royal Horticultural Society, held in the Drill Hall on January 9th, and was recommended for a first-class certificate by the Orchid Committee. The parentage of this *Cypripedium* was given as *C. Smithi* and *C. insignis*. The dorsal sepal is superb. The central colour is bright green, with prominent lines of chocolate-brown spots. The margin is white, flushed with rose. The petals are pale claret, with large varnished brown spots. The pouch is reddish claret. The exhibitor of this *Cypripedium* was Mr. W. M. Appleton, Weston-super-Mare.

CYPRIPEDIUM SEDENI PORPHYREUM.

THE typical *C. Sedeni*—if such a term is allowable in this case—is a very fine garden Orchid, but this variety is a great improvement on it. It bears the same relation to it in a way that *C. aurea* does to *C. Dowiana*, and it is capable of keeping up a longer display than any other kind. For months on end the spikes continue to produce flowers, and these are finer in colour than those of *C. Sedeni*. This is a hybrid that will continue to be grown as a good garden plant, no matter what becomes of some of the expensive rarities that just now are fashion's pets, simply owing to its intrinsic value as an easily grown, free-flowering, and beautiful garden plant.

LÆLIA SUPERBIENS

Small specimens do not show the beauty of this grand *Lælia*, which is certainly worthy of the attention of all who have a suitable structure for its culture. To grow the largest plants

a large house is necessary, but a fine plant of it now flowering does remarkably well in a fernery. The pots must be large enough to take the plants quite easily and allow room for extension, and the compost ought to be rough and open, containing large lumps of burnt clay or charcoal mixed with peat fibre and clean sphagnum moss.

Growers who have had to deal with imported plants know that these are often difficult to get into shape, and with *L. superbiens* the difficulty is greater than with most kinds, for the rhizomes are very stiff, and the pseudo-bulbs large and stubborn to bend. Often it is necessary to cut almost through the rhizomes; and incidentally it may be mentioned that this cutting, instead of injuring the plant in any way, does it good, by causing it to break into fresh growth at places that were previously bare, and by these means makes a more

regularly furnished plant. By pulling down with wire or stout cord the specimens can be shaped a little, and the next time they are potted they may be still further improved by setting some part higher or lower as the case demands.

As to temperature one slightly below that of the *Cattleya* house is best, but the plants will do very well with the *Cattleyas* if no intermediate house is at command. The young growths when forming are usually covered with a gummy exudation that is evidently intended as a protection against crawling insects. Unless this is very plentiful no harm is done by it, but I have known cases where it envelopes the young bud so closely as to hinder its proper swelling, and then it is advisable to sponge it off.

The flower spike is erect from the centre of the growth, and bears upon the apex a cluster of pretty flowers. They are of various tints of rose, and altogether remind one of a large and well coloured *Schomburkia*. *L. superbiens* is one of the discoveries of Mr. G. Ure Skinner, who is said to have first seen it in a state of semi-cultivation by natives in Guatemala. These call it the Wand of St. Joseph, and it is said to grow in great luxuriance in sheltered places, often with flower spikes 12 feet in length. They never attain this size under cultivation.

MR. THORNE'S TREATMENT OF ORCHIDS.

As I expected, Mr. Thorne has set up no out-of-the-way theories with regard to his success with Orchids difficult to grow, and I would like to add my commendation to that of the Editor on page 16. Those who have seen the plants frequently exhibited at the R.H.S. meetings by this very successful grower must have been struck by their singularly healthy appearance, and will be glad to note the simple and observant methods that have led to such excellent results.

DENDROBIUM CRASSINODE BERBERIANUM.

The new year brings us many bright and beautiful Orchids, but none more so than the early flowering section of deciduous *Dendrobiums*. This, it is true, is not yet

in bloom, but the fast-swelling nodes tell of bright things to come in the near future, and the interest of watching the flowers as they develop is great. The variety named above is not nearly as common as many people imagine, and it is the custom of some dealers to mark any fairly good form *Berberianum*. When a true stock of this Orchid is secured it will be found to be one of the finest of the spring-

flowering plants, the bright magenta crimson of the tips of the segments carried well down, and contrasting strongly with the yellow on the lip.

It is not happy in a large receptacle of any kind, preferring small baskets or pans, where the roots reach the sides easily. The type and the variety are both apt to suffer from decay of the lower parts of the stems, and this is always worse when they are growing in large pots. As a companion plant to *D. c. Berberianum*, *D. c. album* may be grown, as the white and bright red forms look remarkably well together, and one helps to show up the other. The cultural details are the same as have frequently been described for other deciduous kinds, the most important points being a quick season of growth, thorough ripening of the growths, and subsequently a proper season of rest.—H. R. R.

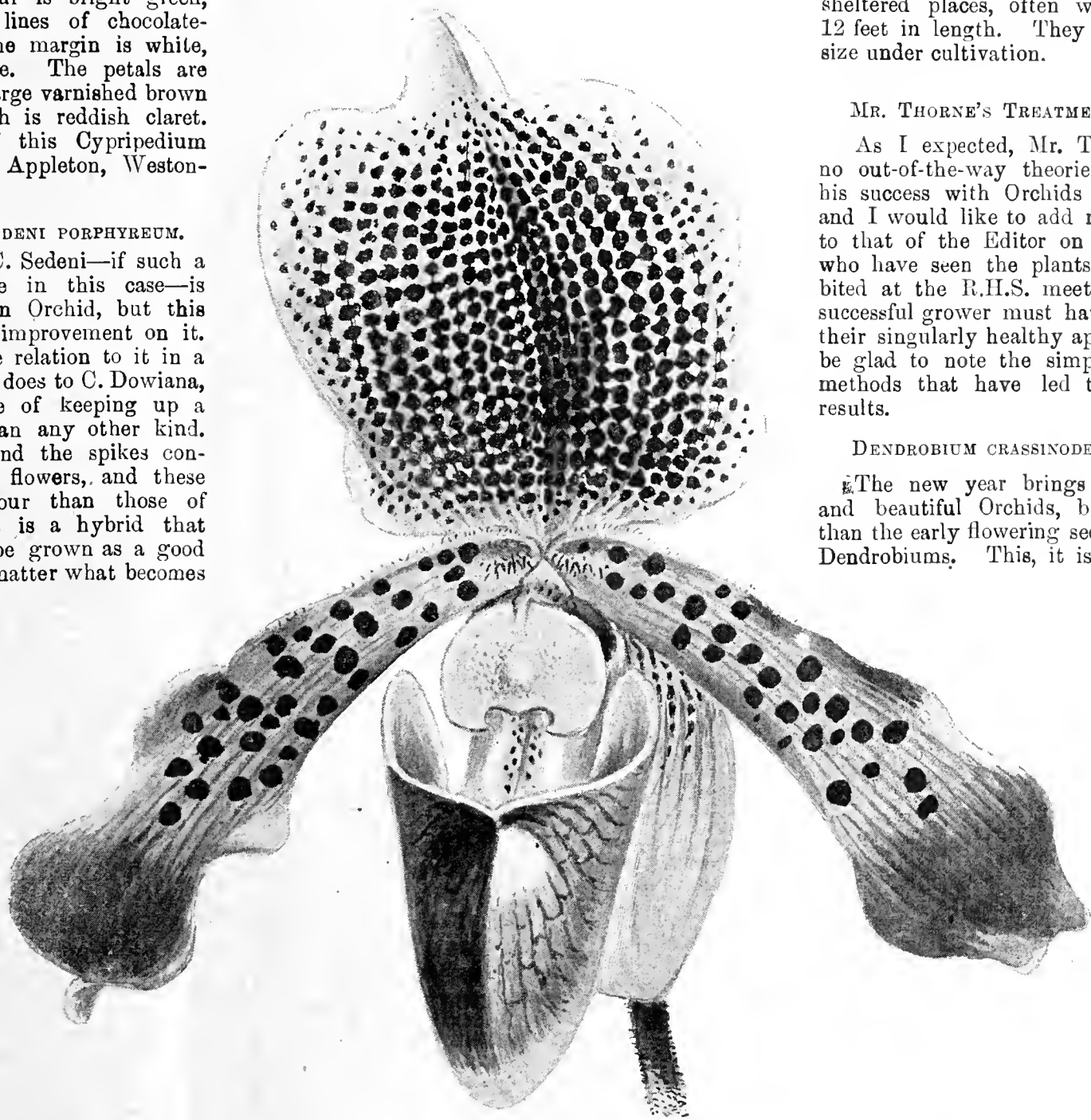


FIG. 9.—CYPRIPEDIUM SIR REDVERS BULLER.

WALNUTS.

WERE it not that it requires a good-sized tree to produce nuts by anything like the bushel in quantity, it would seem a matter of wonder that the Walnut is not in evidence in England to a greater extent, for whether as a fruit or fancy timber tree it possesses a very material value. Doubtless the imported article from France and Spain, which forms part of our winter dessert, is superior to that produced in our own country, and apparently has infinitely better keeping properties, to which latter point I will allude later on. Wherever grown, however, the Walnut is a tree of fairly rapid growth and comes, comparatively, very early into bearing, considering the enormous size to which under favourable circumstances it may eventually attain. My point, however, in this article is rather to remark upon the utilities available to those who are so fortunate to be the possessors of full-sized park or orchard trees in vigorous bearing, than to advocate the advisability of planting, however desirable in itself, which must of necessity be to a large extent a case of doing so for one's heirs.

Apparently (I speak as an amateur merely) English Walnuts vary in kinds to a rather unfortunate extent, that is to say the several indifferent species are hardly compensated for by their sister superior ones. In my own neighbourhood in the Midlands, where fine spreading full-sized Walnut trees are fairly frequent in playing a part of park and ornamental timber, several different kinds are represented.

This autumn afforded a particularly bountiful yield of nuts from all trees. The best perhaps (though I think only from a market point of view) was the Borenut. This is in my own case a really enormous nut, with a double appearance, of a rough and angular shape, but withal a showy and handsome fruit. It shells itself, moreover, remarkably clean. I have found it for an English Walnut fairly easy to preserve. Its exterior, however, rather belies its interior, for it has a superabundance of pulp besides containing much less kernel than one would expect, owing to the space and angularity of its shell.

A truer type of Walnut of a much smaller size, of which I have several very large trees, contains certainly more kernel than the above, though not half its size or weight. Nevertheless this Nut only fetched a third of the price that the other sold for in the market. A third kind I possess in my grounds, but this is of so minute a size as to render them quite valueless, at any rate for market purposes. I am inclined to think people owning Walnut trees do not sufficiently appreciate the value of the crop or take the comparatively little trouble to harvest it. My own trees are partly located in the park and partly in the orchard; in both cases the bulk of the crop is secured by assiduous hunting about under the branches after any wind or frost, and if indeed fully matured a careful picking up every morning. If left on the ground to accumulate they rapidly become black and saturated in the damp and dewy grass. This process, moreover, is assisted and quickened by a thoroughly good shaking, sending a boy as far up the extremities of the branches as is safe, and where he cannot reach or the Nuts refuse to fall from insufficient pressure, quite a little sport and muscular exercise and skill may be developed by shying up with convenient sized and sufficiently heavy pieces of wood. I know the question of thrashing Walnut trees is a somewhat vexed one. Personally I incline to the opinion that not only does it do no harm, but that the unusual friction is beneficial, though in the case of a sound and good-bearing tree it may be well to avoid the sad example of the flourishing young maiden who "was well, would be better, took physic, and died." As with most things it seems superfluous to do other than leave well alone.

Two rather serious enemies, in common I suppose with most others, I have to contend with. Every morning as I dress I have to endure the exasperating sight out of my window of seeing rooks and jackdaws in large numbers and endless procession journeying to and fro with Walnuts in their bills. The quantity they carry off must be simply enormous, and this goes on not only in the early morning, but if undisturbed their depredations are continued pretty well all day. I am told these winged thieves bury the Nuts in the cow manure on the pastures, to find them later when they are pinched for food. The other enemies are, I fear, one's own neighbours, who, as in the case of Mushrooms, seem to regard the Walnut pretty well as their "little perquisite."

A word in conclusion on the question of how to store Walnuts. Numberless ways are advocated, but my own experience is the following as the simplest and most effectual. After being thoroughly dried by spreading them out for preference under a bright sun and breeze, place them in not too thick layers of perfectly dry sand, sawdust, or bran; the latter I almost think is the best, and more likely to keep the nuts free from mildew. This method hardly seems sufficiently well known. My purchaser this autumn, a town fruiterer, seemed surprised at the clean and well groomed appearance of the fruit, and was evidently glad to be told, and recommended this manner of keeping it. The Walnut, however, in a special degree requires considerable care in the storing process. The amount of inherent moisture until

thoroughly dried is really surprising, and its extreme tendency accordingly to mould and decay a source of difficulty, making the fruiterer very shy at buying unless he has a ready and immediate demand. A slight overdoing of it, moreover, in the opposite direction, may very easily dry up the kernel altogether, and render it in consequence valueless.—J. A. CARNEGIE-CHEALES.

EARLY TOMATO CULTURE.

WHERE a temperature of 65° to 75° can be commanded and plenty of light, the present time is suitable for commencing Tomato culture. Plants raised now and grown under good conditions will afford ripe fruit in May and June. Seeds readily germinate in the temperature above named. If sown thinly the seedlings grow vigorously. Heat and light are essential, as well as all the sunshine available, to maintain the sturdy character of the growth. The best plants may be obtained from seed, though cuttings are relied upon for the first crops in some cases, but the plants are necessarily rather long and weakly owing to the winter growth. Few growers rely upon cuttings now. The red varieties are the best for first crops, depending chiefly on Early Ruby, Earliest of All, Winter Beauty, or Ladybird.

The seeds can be sown either in pots or pans, drained well, and filled with a light rich compost mainly consisting of loam, leaf soil, and sand. The seeds are so certain to germinate, provided it is good, that it is worth while to sow it an inch apart on the surface of the soil. Cover with an eighth of an inch of fine soil. Until the seedlings appear uniform moisture may be kept, the best plan being to plunge the pot in cocoa-nut fibre in a bottom heat of 65° to 70°, excluding light also by covering the pot with glass or paper.

In less than a week the seedlings will push through the soil, so the pots must be examined after the first few days, for the moment the seedlings appear they will rapidly elongate if light is not admitted immediately. Transfer the pots to a light, warm position on a shelf, where they will be prevented from drawing out, and thereby kept sturdy. When the seedlings have formed three leaves transfer each plant to a small 2-inch pot, sinking the seedling down to the lower leaves. Return to the shelf, elevating the pots closer to the glass if the shelf is some distance below. When these pots become filled with roots the plants must be shifted into two sizes larger. Still give the plants light and warm quarters, growing them steadily and sturdily until by their vigour and abundance of roots further room must be given.

They may pass into the fruiting pots at this stage, which may be for early crops 9 or 10 inches in diameter. Drain the pots fairly well, placing one large crock over the central hole, and a few smaller pieces over that, covering them with a layer of fibry turf. The compost should be good and substantial, but not over-rich. Two parts of fibrous turfy loam and half a part of decomposed manure, with a similar quantity of crushed charcoal and wood ashes, also a dash of bonemeal. In potting place the plant low down in the pot, and make the compost firm round the ball, just covering the latter with soil after the side space is filled. This amount of compost is sufficient for a start. The pots should be given a warm but sunny position, so that the plants may have all the light available.

As growth proceeds side shoots will issue from the axils of the leaves. These must be rubbed out, and the plants confined to one stem, training this to a stake, eventually to a wire or trellis under the roof. Bunches of flowers appear on the stems midway between the leaves. When the individual flowers are fully open the pollen should be assisted to disperse by shaking the stem at midday, so that the dust-like particles may descend upon the stigma of each bloom and fertilise it, causing the fruit to swell rapidly. The house must be dry at the time the pollen is wanted to disperse. Continue the rubbing out of side shoots, and water sparingly after the final potting until the roots work freely.

An application of fresh compost may be afforded soon after the first bunches of fruit have set. This is a direct encouragement to the surface roots to multiply, and helps the fruit to set and swell readily. Further top-dressings must be given when roots appear freely on the surface of the last application. Additional assistance is given by applying liquid and artificial manures, but it is better to give small or weak, but frequent doses, rather than strong applications. Heat must be given more or less artificially to flowering and fruiting plants until June, after which sun heat is sufficient, though in cold, dull weather some warmth in the pipes would be of advantage in assisting the flower to set. Free ventilation is required by Tomatoes, a constant circulation being necessary in summer.

The temperature required for fruiting plants ought to be from 55° to 65°, ventilating freely on sunny days with a warm dry atmosphere in the structure. A tablespoonful of superphosphate is an excellent addition to every bushel of compost used for top-dressing. If the pots stand on a border of soil after a good crop is set and swelling, roots will pass into the soil and assist the crop.—E. D. S.



NATIONAL CHRYSANTHEMUM SOCIETY.

THE Executive Committee of the above Society held a meeting on Monday evening at Carr's Restaurant, Strand. Mr. Thos. Bevan occupied the chair. The annual meeting was decided to be held at Carr's Restaurant on Monday, the 5th prox., at 7 P.M. The Treasurer then submitted the annual balance sheet, by which it appears that the income for the past year is about £100 in excess of what it was the preceding year, and a sum of £50 is proposed to be added to the reserve fund. On the other side the expenditure for prize money amounted to £508 13s., Secretary's salary £100, and various other charges and expenses incidental to the working of the Society. Altogether it is considered that there is a balance of about £200 in assets over liabilities.

The Secretary then read the draft annual report of the Executive Committee, which referred to the high quality of the Society's three exhibitions, to the work of the Floral and Classification Committees, and to the satisfactory condition of the finances.

Mr. Harman Payne submitted a report from the deputation which visited the French National Chrysanthemum Society's Show and Conference at Lyons last November. Upon the proposal of Mr. Moorman a vote of thanks was passed to the gentlemen who paid the visit, and it was resolved that the report be printed in the new schedule. Certain fixtures—viz., those of the Floral and Executive Committees' meetings—were after some discussion duly made, these meetings being in future, for the convenience of country members, held on the same day of the week. The Schedule Sub-Committee presented an interim report. This involved a good deal of discussion relative to the foundation of an Exhibition Committee, and to the amendments of those regulations relating to the shows.

LATE FLOWERING CHRYSANTHEMUMS.

WE have this week cut fine blooms of Mrs. H. Weeks (taken on second bud) and Georgiana Pilcher, which, at this time when flowers are so scarce, are most useful. Mrs. Weeks, grown on the bush, flowers well at this time of the year; so does the charming single Mrs. Langtry, which at the present time is in full bloom, and with its lovely perfume is the delight of the ladies. I find cuttings of the latter inserted in May, and potted in 7 and 8-inch pots, do well, and come in late.—G. CARVILLE, *Duncombe Park Gardens, Helmsley.*

CHRYSANTHEMUMS IN JAPAN.

AN American lady in Tokio, Japan, has sent to her friends a very entertaining account of the home of the Chrysanthemum, its people and their customs. Among other matters reference is made to our favourite autumn flower, and the "American Florist" is indebted to E. G. Hill of Richmond, Ind., for permission to print therefrom the following descriptions of a Chrysanthemum exhibition, and one of the finest private collections of these plants in Japan:—

"Last Wednesday we went to Dangozaka to see the famous Chrysanthemum show. Dangozaka is a park in the city, about six miles from here, full of interesting temples and trees, but the most attractive thing at present is the street. All along down this lane or street are side shows, admission to which costs five cents, and there one finds all sorts of legendary history carried out in Chrysanthemums. There are wire forms, for instance, of a man, woman, boat, and house, and the Chrysanthemums are trained from the beginning over these wire forms. The roots being inside, the dress, for example, of a woman, sleeves, sash and all, are one mass of colour, and at a distance look like changeable silk. Very small varieties are used, but in all colours imaginable. The forms are all life size. For instance, one very fine figure was that of a Japanese warrior slaying a mammoth dragon, all in flowers except the face and hands, which were of wax. In one place they have represented the famous waterfall at Nikko all in white Chrysanthemums, and the spray and waves at the foot of the fall are almost perfect. Then there was a big boat, all of the flowers, in big waves, with life-size figures in it, and the whole thing, figures and all, worked by machinery. A man sat down and told the history of all these things. All I can say about it is very far short of the reality. No one can form any idea of the real ingenuity of these people unless one really sees it. The individual flower they do not care for, it is the way they can train them that receives their admiration."

Referring to the gardens of Count Okama the writer continues:—"The entrance to the grounds is beautiful, such hedges, such trees

were never trained in America, such picturesqueness was never seen out of Japan. I cannot go into detail, but will try to tell about the Chrysanthemums. The plants are in sheds made of bamboo, and immaculately clean and tidy. There were six sheds altogether, one devoted to wild Chrysanthemums entirely, one to those that are trained up to bear one flower only, but not one equals those we have seen at home. Count Okama's secretary says they care least for that part of the cultivation of these plants. Each flower is on a wire frame, and the petals all combed out on the frame.

"In one shed were three plants, a white ragged variety and two red ragged ones; they are trained in a wire frame, and one plant has over 1000 blooms, each bloom is at the end of a single stalk, and all this from a single root. It is fully 15 feet across. In fact, a short distance off it looks like one mammoth bouquet of flowers, or rather like one big flower. The flowers themselves all are about the size of the palm of the hand. Another shed has each plant trained to fourteen blooms arranged as a picture; they are rare sorts, and the plants are raised in back and diagonal rows. It is a beautiful sight, and very pleasing after one gets used to the conventional way. Another house has one big plant, and from a single root there are forty varieties and colours of flowers, all having been grafted upon the single root. It is marvellous, and there is no sham about it, for one can see the root and trace the flowers. It looks like a huge bouquet of all colours. Then there were two immense balls, at least 4 feet in diameter, each colour in sections like an Orange, with a bow knot of flowers at the bottom, all growing inside, but a solid mass of bloom on the outside."

WINTER ACONITES.

ALMOST as soon as the new year opens the golden flowers of the Winter Aconite begin to thrust themselves through the soil. Protected from defilement by the blackness of Mother Earth as they force their way through the ground, the little Elizabethan ruffs, which shield the flowers at that period of their career, serve afterwards as ornaments to the golden blossoms. They are small and unassuming these Winter Aconites, yet their beauty in a mass is only equalled by the cheerfulness they inspire by their gleams of gold when the garden is otherwise dull and bare. They are harbingers of the bright flowers of spring and summer, and show us that golden colour which brightens our hearts with the summer sun.

It is strange how some despise the Winter Aconites. They are too cheap to be exclusive, they are too hardy to give trouble to grow, and they are not exotics, but thrive in our own dear land. These things are against them being found in many gardens of the exclusive, but they are their passports to the hearts of the numbers who care for the modest beauty of our simple hardy flowers of spring. It is somewhat anticipating things to speak of *Eranthis hyemalis* in connection with the word "spring;" yet spring comes with the Snowdrop and the Winter Aconite, and does not dally until the last frosts are away, and the sun is warm, and the breezes balmy and mild. Thus one would speak of them now, when their coming is at least nigh.

Although not believed to be a true native, the *Eranthis* is naturalised in some places in this country, where it has been so long that it may be said to be as truly British as some of our families, whose descent can be traced to some ancestor who established himself in "this seat of Mars" from across the silver streak, which is our barrier from the outer world. The Winter Aconite has so long been with us that we look upon it as of native birth. We rejoice when we see its bright flowers, for they tell us of the crowds of blossoms which come behind.

When one has penned this appreciation it seems superfluous to say aught about the flower and its wants. It demands little from our hands. A moist rather stiff soil is what it likes, but it will content itself, and be happy, too, in a lighter one. With moisture and shade it can do without the stiff soil, but it resents having its tubers dried by the summer's drought. One has experienced this in hot and dry seasons, such as sometimes fall to our lot. The Winter Aconite should never be kept long out of the soil, and ought to be planted as early as possible after the pretty leaves die down.

It may be too common to take up for itself a large space in the garden, yet it need not altogether monopolise all the space in which it grows. It may be planted among other plants, which will occur to those familiar with flowers, whose blooms would succeed those of the *Eranthis*. I have a bed of Winter Aconites and Lily of the Valley in a shady corner. There the two are in happy companionship, the cups of the *Eranthis* passing away long before the bells of the *Convallaria* appear. If the leaves of the Winter Aconites are not away when the Lily of the Valley comes into growth they are soon hidden by the shapely leaves of the "naiad Lily of the Vale," as Shelley calls it.—S. ARNOTT.

THE VALUE OF DRAINAGE.

THERE are some matters of equal importance to the gardener and the farmer, and this is one of them. Who can say how many acres of land there are now lying waste and profitless that only require the work of the drainer to carry off the superfluous water in order to make it fertile and yielding? It is unreasonable to expect a cold water-sodden soil to be profitable to either gardener or farmer, and it is surprising how many presumably practical men there are who continually chafe at disappointing results without ever considering this simple but important reason for the failure.

During the past few dry seasons the importance of thorough land drainage has not been so apparent, but it makes no difference to the fact, and one cold wet summer would bring it before us in all its significance. Fortunately for the appearance and fertility of the country the larger proportion of land drains itself naturally, and by the suitable formation of the substrata the moisture, after performing its functions, is carried away. I say, fortunately, because if it was not so we should have many more of those dreary, unfertile areas of land that grow nothing but clumps of rushes and wiry grass, which are to be seen in all districts, and are as unsightly to the landscape as they are useless to the cultivator. Illustrations such as these, and the difference to be seen after the superfluous water has been carried away, point more plainly to the fact that good drainage is one of the first principles of land cultivation.

And yet how often it is overlooked! More than once I have seen instances where well-meaning persons have spent time and money in planting fruit trees, and the capital has had to be written off as a dead loss. A few years have seen healthy vigorous trees transformed into miserable cankered specimens with gaps here and there showing where they have succumbed, while the would-be fruit grower in time gets tired of waiting for improvement and throws the whole thing over as a bad job. Due regard for the first principles of cultivation might have saved all this, and a few pounds spent in drainage at the outset would have been money well invested.

The county of Kent has a wide reputation for the production of fruit, and its climatic advantages and fertile soil are often referred to as being the direct causes of it. Quite so, but we must not overlook the fact that a greater part of the county, and particularly that where the most fruit is grown, has a perfectly natural drainage in the substrata of chalk which exist, and consequently the soil has every opportunity of being warmed and rendered free and friable. All the same, there are many instances of fruit failures in this favoured county that can be directly attributed to superabundance of water in the ground, and to the wrong impression held by some persons that because Kent is a fine fruit producing county it can be grown everywhere.

One might readily carry the argument from fruit grown outdoors to that under glass, where good drainage is all-important. Shanking of Grapes and other Vine failures may more often than not be traced to defective drainage, followed by the consequent sourness of soil, and whole or partial failure of root action. I wonder how many cases there are to-day of sickly Vines where growers are doing all they can to improve matters by feeding and treating the parts that are visible. And the task is a thankless one, for the evil lies deeper, underneath the border in fact, where clogged or defective drainage no longer acts as a water conductor, but as a barrier, whereby the periodical applications made to the roots are conserved instead of being carried away, and under these conditions it is only a matter of time for the best of composed borders to become sour and sodden instead of a healthy feeding ground for fibres. We often hear complaints about worn out Vines, though no one has yet been able to determine how long a Vine is capable of producing high quality Grapes provided all conditions are satisfactory, and it is quite reasonable to conclude that many so-called worn out Vines are brought into that condition through defects in the drainage system of the borders.

It is the same with other fruits grown under glass. Take Peaches and Nectarines for instance, and their failure to ripen the young wood and produce fruit blossoms. It is not so much the water they receive as the fact that the moisture cannot get away but remains to sour the soil. Nature teaches the lesson, because with fruit growing out of doors wood rarely fails to ripen and produce fruit buds, even in wet seasons if the drainage is good, and it is only where the latter is defective that the evils mentioned above become apparent.

As a final illustration, how important it is that the drainage of all plants in pots should be good, and particularly so during the winter months. Who is there among gardeners who has not seen Heaths and Azaleas die in a mysterious manner, and pot Camellias turn sickly and drop their buds, and all because the water after performing its purpose cannot pass freely away? Softwooded plants succumb from the same cause, and defects in drainage frequently result in wholesale losses of Cinerarias and similar plants which require careful treatment through the winter months. Crocking a pot is in itself a

simple operation. It is the first lesson a garden boy learns, and one of the most important, and often the man who plies the water can is blamed for the shortcomings of the one who crocked the pots.

Thorough drainage then is indispensable in all cultural departments, and no substitute can be put in its place. Where Nature does it herself, all well and good, but where it becomes part of the work of the cultivator let it be understood that there are two ways—the right and the wrong. The former is conducive to the best results, the latter courts failure, and any attempt at a middle course is risky, if not dangerous.—H. H.

EXPERIENCE WITH CLUBBING.

AN ANCIENT REMEDY.

ON points of the nature referred to on page 36 last week on the extraordinary case of clubbing on Apple roots, there is no guidance so safe as that of experience. Perhaps I may usefully refer to a case of clubbing or finger-and-toe in Turnips that occurred long before the disease was proved by M. Woronin, a Russian botanist, in 1876, to be due to a slime fungus, *Plasmodiophora Brassicæ*, and even before the Rev. M. J. Berkeley expounded the nature of the Potato murrain in 1846. It was in 1844 that, as in previous years, Turnips finger-and-toed on two plots of land of a light sandy nature, every year cropped with Ashtop Potatoes, a second crop of Potatoes for seed being taken on one plot and Turnips on the other in alternate years.

The Potato epidemic ended the second cropping with Potatoes in 1846, and in that winter (1846 and 1847) one of the plots was marled at the rate of a hundred cartloads to the acre. I remember it well, for to a lad of nine years throwing lumps of clay marl about was no joke. The weather broke the lumps up beautifully, and a dry time being chosen for ploughing in, the leader of the horse was not hampered by pounds of clay adhering to each foot. The plot was planted with early Potatoes, and given a dressing of half a ton of salt to the acre. This perhaps did more harm than good, as the disease was rampant among them.

Turnips followed the Ashtop Potatoes, and they did not finger-and-toe as before; then, cleared of the Turnips in October, the land was ploughed and sown with Wheat on November 5th, 1847, and in 1848 there was a heavy crop, as I had reason to remember, as I cut my hand to the bone in letting the sickle run up the straw instead of bending the latter over in shearing. Output 60 bushels of Wheat per acre, and tailing for grinding to mix with "demicked" Potatoes after boiling, to fatten pigs; there was no more finger-and-toe amongst Turnips on that plot of ground.

The other plot was dressed with salt, half a ton to the acre, after the Ashtop Potatoes, then sown with Turnips, and two-thirds of the crop decayed on the land. A breadth of Cabbage, however, did not club, for the land where they were grown was dressed with a mixture of soot and lime mixed with salt from cured bacon. At that time I knew as much about club fungus as about growing Cabbages and Turnips; but I had a microscope, even in those days, but of low power, and it failed to bring into view anything but what I afterwards learned was a naked mass of protoplasm. A dressing of gas lime—a cartload to the rood, for that was the extent of this plot—enabled us to grow Turnips after the Ashtop Potatoes.

I have often pondered over these experiences of early days, and wondered why so very few persons now-a-days dig marl pits and chalk pits. In olden time they were common; light land was clay marled and hot land chalked. The finger-and-toe came in with the field culture of Turnips about 1645, but appears to have made very little advance until marling and liming passed into oblivion. Now we discover that land wants lime to provide wholesome nutrition for useful crops, and our discoveries simply enforce the wisdom of ancient practices, and experience proves that they cannot be disregarded without prejudice. With all our boasted advancement we still have to dig the soil "deeper to find the gold"—the inorganic elements for blending with the organic accumulations of ages.

Of all correcting substances lime appears the chief. It was the lime of the marl that enabled the Turnips to resist the slime fungus, just as the cyanogen of the gas lime killed the parasite on the other plot and improved the land for producing Brassicas.—G. ABBEY.

WATER EXPANSION.—It was an odd coincidence that on the day the last issue of the Journal came to me that I should have also seen in the month's issue of the "Strand" an illustration of a jug which, left exposed to severe frost for one night only, and full of water, was shown with the water a solid block of ice, and the jug split in halves. That was singularly conclusive as to the distension of water which takes place when it is solidified by frost. There were also, oddly enough, in the number illustrations of a ship in different stages of sinking because the ice in the northern regions had crushed in the side of the boat, and thus admitted water. Of course, object lessons of this kind are not required by those who do know, but there still seem to be some people in the world who need such proofs to convince them.—A. D.



Recent Weather in London.—On Saturday morning last there was a general frost over the whole of the metropolis, and it kept clear and bright throughout the day. Sunday was brilliantly fine, but during the early hours of Monday morning rain fell heavily, and continued at intervals until midday on Tuesday. After this time, though nothing more than a drop or two of rain fell, it was dull, unpleasant, and very enervating. On Wednesday morning, at the time of going to press, it was very dull.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held in the Drill Hall, James Street, Westminster, on Tuesday, January 23rd, 1 to 4 p.m. A lecture on "The Neglect of Flowering Shrubs in Gardens" will be given at three o'clock by Mr. Geo. Bunyard, V.M.H.

Shirley Gardeners' Association.—The monthly meeting of above Society was held at the Parish Room, Shirley, Southampton, on Monday, 15th inst., Mr. B. Ladhams, F.R.H.S., presiding. Mr. W. Middlebrook, of Messrs. Veitch & Son's Nursery, Chelsea, was to give a paper on "Pear Culture," but being unable to attend, his carefully prepared document was read by Mr. G. Miles, The Gardens, Portwood Park. The paper dealt with the soils, subsoils, position, planting, climate, stocks, pruning, diseases, and insects. A good discussion ensued.

Columbines.—Except to the botanists *Aquilegia* species have far fewer charms for the gardener than have the more popular hybrids of species, so plentiful, so far as seed is concerned, although not half so widely grown in gardens as they should be. These hybrids seem to have collected through intercrossing, all the forms and colours found in the named species, with many more hues and combinations. The best time to obtain seed for sowing is in the spring. As a rule the seed ripens rather late for sowing outdoors the same season, but some sown in pans or boxes in September under glass will give strong plants to put out the following April. I greatly prefer to have strong plants to put out where they are to bloom in September, as these flower very finely the next year, whilst late seedlings too often fail to bloom in the third year.—A. D.

Spring Planting Trees.—Though what Mr. A. H. Pearson has written in relation to tree planting is correct, the majority of gardeners will continue to prefer doing that work in the autumn, whilst the soil is yet fairly warm, rather than in midwinter or in the spring. But let the season be what it may, so much of success after planting depends on the care exercised in lifting first, and the shelter given to the roots when lifted next, ere the replanting is done. Trees lifted in a nursery can be replanted as fast as lifted. But when they have to be sent long journeys by rail, and are some three or four days *en route*, then roots suffer very much, especially if exposed to the air. When received it is wise to stand the roots a few hours in water to enable them to become plump before the planting is done. I do not at all think there is really any planting now done in holes the dimensions of a silk hat. The metaphor may do to point a moral, but like not a few others it is somewhat exaggerated.—A. D.

Kalanchoe flammea.—The figure of this plant on page 27 gives a good idea of the light airy appearance which it possesses, but cannot convey to the reader's mind the beautiful orange scarlet colour of the flowers. Those who saw it in flower at Kew or at the Chiswick Conference on Hybridisation will need no farther inducement to obtain it as soon as possible, and those who were not fortunate enough to see it may be firmly convinced that it is one of the finest introductions of recent years, and will prove invaluable when we have mastered the details of its cultivation. It must not be confused with another species of this genus which was introduced some few years ago, and now appears to have dropped out of cultivation. That plant was easily grown, but the flowers lacked colour and proved worthless for all practical purposes. The present species promises to be as great in success as the other plant was in failure.—W. H. DIVERS, *Belvoir Castle*.

Death of Mr. Thomas Harkness.—This well known nurseryman passed away at Oakfield, Hitchin, on Wednesday, December 27th, 1899, at the advanced age of eighty-two years. The deceased retired from business about twelve years ago.

Park for Edmonton.—Pymmes Park, a residence and estate of 53 acres, has come into the possession of the Edmonton District Council, which has acquired it for £36,000 for the purposes of a public park and recreation ground. The estate is well wooded, and contains a fairly large sheet of water. It is situated in the heart of a rapidly increasing neighbourhood. The Middlesex County Council has contributed £6000 towards the purchase, and grants have also been made by the Metropolitan Tramway Company, the City Corporation, and the City Parochial Foundation.

Reading Gardeners' Association.—There was a large attendance of members at the fortnightly meeting of the Reading and District Gardeners' Mutual Improvement Association on Monday evening to hear Mr. G. Hinton of Walmer Gardens, Reading, read his essay, which was awarded the first prize in the recent competition, "The Planting of a Garden with Hardy Fruit Trees and Bushes." The paper gave rise to much criticism, and during an hour and a quarter's interesting discussion many points on planting, manuring, and pruning were touched upon. A hearty vote of thanks was accorded to Mr. Hinton for reading his paper, and to Messrs. Bunyard & Co. of Maidstone and the Hon. Sec. for presents of books to the library.

The New Year for Tree—Mother Nature has just celebrated a birthday, for according to the "Jewish World" Monday was the fifteenth day of Shebat in the Hebrew calendar, and the New Year for Trees. Our contemporary points out that of the four new year days ordered by the Talmudio authorities none is more apposite than this one, which reminds that the longest nights are over, that the sun renews its warmth, the forests throw off the lethargy of winter, and the sap begins to rise in the trees. The Rabbis recognised the dulling influence of the shorter days and the exultation of the brighter season, and commanded this simple festival of recognition of the operations of Nature. As contrasted with heathen beliefs at the period when this celebration was inaugurated, our contemporary says "it should be found that this festival of the trees' birthday has had no little share in the destruction of superstition among the Jews, and especially among the Jewish peasantry. To-day only the calendar and its observances recall the life of far-off days; but it is well that the calendar should stimulate us with such memorabilia.

Warranty of Seeds—A Wrong Crop.—Mr. Justice Channell had before him recently, in the Queen's Bench division, the case of "Howcroft and Another v. Perkins," which was an action brought by the plaintiffs, seed merchants, against Mr. G. Perkins, a nurseryman and market gardener, to recover the balance of an account for goods supplied. Defendant admitted the claim, but set up a counterclaim which raised a point of considerable interest to seed merchants, nurserymen, and others. It appeared that in October, 1898, the plaintiffs' traveller called upon the defendant and obtained an order for certain quantities of seed, including 1 lb. of Clayworth Prize Celery seed, the price of which was 3s. The defendant said that instead of supplying him with what he ordered the plaintiff sent him Turnip-root Celery seed, with the result that the plants which he reared, numbering 14,000, only realised 6d. per dozen instead of 1s. 6d. The defendant contended that the plaintiffs' traveller warranted that he should have what he had ordered, though he admitted that the invoice sent by the plaintiffs after the goods had been delivered contained a clause to the effect that the vendors gave no warranty, express or implied, as to description, quality, productiveness, or any other matter to any goods sent out. They would not be in any way responsible for the crop, and if purchasers did not accept the goods on these terms they were to return them. Plaintiffs denied that there was any warranty, and contended that the defendant was bound by the terms of the invoice, which were common in the trade. They further said that unless they were protected by these terms they would have to go in for an extensive system of insurance. In this case the plaintiff purchased seed of the value of 3s., and alleged that he had sustained damage of about £60. Mr. Justice Channell gave judgment for the plaintiffs, holding that the terms contained in the invoice were reasonable and binding upon the defendant. Judgment accordingly for the plaintiffs on the claim and counterclaim with costs.

Bristol Gardeners' Association.—The fortnightly meeting of the Society was held at St. John's Parish Room, Redland, on Thursday, January 11th. There was a good attendance, Mr. C. Lock presiding. Mr. Garnish of Stapleton read a paper on the subject of "Strawberry Culture." He recommended a soil of clay, neither shallow nor stiff, to be well trenched and manured, and runners to be laid in June for planting at a distance of 2 feet apart. He urged the frequent use of the hoe, and gave many helpful suggestions, for which he was heartily thanked. Prizes for six dessert Apples were secured by Mr. Marsh, first, and Mr. Sutton second. Certificates of merit were awarded Messrs. M'Culloch and Clark. A special feature of the exhibits was a fine collection of Apples staged by Mr. Bannister of Cote House. It consisted of nearly thirty varieties of choice fruit, and was much admired by the members.

The R.H.S. Meetings.—At the Drill Hall meeting, on the 9th inst., the members of the Fruit Committee invited the Chairman, Mr. P. Crowley, to convey to the Council the feeling of the Committee, that one meeting in each of the months of December and January was ample for all ordinary purposes. Not only does the expenditure incurred over such meetings, that are such poor ones, prove superfluous, and indeed wasteful; but the bringing of a large number of members of the Committees to the Drill Hall for no better purpose seems wasteful also. No doubt the inclusion of two meetings into December and January for the first time, as now seen, is due to the importunities of the orchidists, but certainly not to anyone else. It is not fair to Fellows to announce these meetings, and then furnish so little to be seen. If to orchidists two meetings during each of the midwinter months be desirable, their requirements might be met in the Council room in Victoria Street.—A. D.

The Ancient Society of York Florists.—The annual meeting of the Ancient Society of York Florists was held on January 9th in the Agricultural Club Chambers, Pavement. Mr. Ald. McKay, J.P., presided over a good attendance. The Secretary (Mr. G. E. W. Oman) having read the minutes of the last meeting, presented the report. They were very pleased to state that the year's working, all things considered, was most satisfactory. The number of members who had paid their subscriptions during the year was 732. This, with twenty-one new members to be added to the list, made a membership in excess of that of any previous year of the Society's history. The total receipts had been £628 12s. 2d., an excess of £62 17s. 4d. over last year's receipts; but the expenditure had been £653 2s., an excess of £117 15s. over last year. Of that amount £57 13s. had been expended in prizes, and there had been some items of expenditure which would not occur again. Mr. G. Lamb, Hon. Treasurer, submitted the statement of accounts, which were taken as read. The Chairman, in moving the adoption of the report and balance-sheet, said he observed a slight deficit on the year's working amounting to £23 9s. 11d. He did not, however, think they need be under the slightest misapprehension. Mr. W. B. Dyson seconded the resolution, which was passed unanimously.

Sprouting Potato Sets.—As an old Potato grower I am somewhat amused to learn that our American friends have been experimenting as to the comparative values of planting properly sprouted and of non-sprouted Potato sets. I had imagined that such an acute people had determined that matter long since, just as we have. I do not suppose that even the most elementary gardener doubts the great value of planting sprouting Potato sets over those that are unsprouted. It is a matter we have settled to our satisfaction years ago, but is only satisfactory when the sprouting is natural and not artificial. Almost any Potato will throw sprouts in a normal temperature towards the end of the winter. The great bulk of early and midseason varieties where properly exposed to ample air and light will do so by the end of January, except when the temperature is unusually low, but that does not often occur. Even when we have hard winters we get some soft, mild periods, and these provoking great reaction from the low temperature, compel the sets to burst buds early. It is, however, only needful that these sprouts when formed be fully exposed to the light in a cool place, and they will remain sturdy, stout, and deep coloured from the first bursting period until the sets are planted. Nothing is more natural than that they should be productive of earlier growth than results from tubers non-sprouted. Practically the sprouts represent fully three weeks advanced growth; still, farther, they represent average even growth from all the sets, and that is far from resulting when non-sprouted sets are planted.—A. KINGSTON.

Finsbury Circus Garden.—We learn that at the annual meeting of the freeholders and leaseholders of Finsbury Circus, held recently under the presidency of Mr. Gordon Brown, it was resolved to oppose the Bill which is being promoted in Parliament by the Corporation to throw open Finsbury Circus Garden to the public. Only a very small number of the inhabitants can legitimately take part in the opposition, as the Corporation's new leases contain a stipulation that the leaseholders shall not oppose the Corporation in the matter.

American Tomatoes.—It is reported that the Tomato crop of southern New Jersey the past season amounted to 850,000 bushels, while there were also abundant crops of them in other parts of the State, on Long Island, and many sections in New York State. As a result, the price was down to 15 or 20 cents a bushel much of the season. If there had not been a comparatively small crop of Peas and Beans, which obliged the canning factories to put up more Tomatoes than usual, it is doubtful if they could have sold at any price. We remember, says the "American Agriculturist," when few of our friends and neighbours could be induced to eat a Tomato under any consideration. Now it is seldom that we see anyone who does not like them. About 12,000,000 cans of Tomatoes are packed in a season in New Jersey, and about 126,000,000 in the United States. The canning process enables the poor man to have these and many other vegetables and fruits on his table every week in the year if he pleases, at a moderate cost, while it also helps the farmer and gardener to sell their crops in a time of plenty at better prices than they would get if only wanted for immediate use.

Clenkowskia Kirki.—Complaints are sometimes heard about this plant, and others nearly related, not flowering as freely as is desirable. This in many cases is due to it not being properly rested in some cases, I imagine, and certainly was this the fault in some plants I was asked to look at recently. With fair treatment there is no easier grown plant, but it is more truly herbaceous than many plants in the same order. The underground rootstock may be kept quite dry from the time the leaves die off until the early spring, when it may be repotted and gently excited as the leaves push up. It likes a fairly substantial compost, one containing a fairly good sprinkling of half-decayed manure, and if propagation is desired this may be effected by division of the roots at the time of potting. Increase the moisture as the leaves push up, and when the pots are full of roots feed rather liberally. The pretty blossoms are produced from March onward to July and August, according to the time of starting, midsummer being perhaps the most natural time. The peculiar centre to the flower bears a strong resemblance to the column of an Orchid, and the whole flower might easily be taken for a *Miltonia*. Beside this there are several others in the genus, many being remarkable for their fine foliage.—R. HENRY.

Frost and Shrubs.—It will be interesting to learn how far the recent frosts, which seem to have been exceptionally severe in some places, have left their impression on hardy shrubs. Mr. W. Pope writes me from Highclere Castle that he never saw common Laurel injured to so great an extent as now, the effect of the frost on the late and immature growths following in the autumn upon the September rains. During the frost there was at Highclere a heavy coating of snow over vegetables, or otherwise the injury done to those would have been great. As it is, both white Broccoli and Brussels Sprouts are much cut. He mentions a fear that *Laurustinus* are killed to the ground. That was hardly anticipated as likely to follow upon so dry a summer. I remember the terribly severe frost of Christmas eve of 1861, which is thirty-eight years ago, when such terrible havoc amongst shrubs was made, and many assumed hardy things, especially *Laurustinus* and Bays, were killed wholesale. I do not think such harm has been done to shrubs since then; but that frost followed upon a rather cold, wet summer, and went down to zero. At Highclere the frosts registered 22°, 20°, and 17°, which was fairly severe. We have had far severer frosts than these; but it is not always the most intense frost which does the greatest harm to shrubs. Highclere lies high and bleak; yet at Sydmonton, a few miles distant and lower, Mr. Lye registered 29° of frost. No doubt, one reason why frosts sometimes do so much unlooked-for harm is the intermittent nature of the weather. One week soft, mild, and the glass standing at 50°; the next week the glass is down to 10°, a difference of 40°, and enough to cause great harm to result. Gardening in Britain finds fewer difficulties to encounter than is presented by the climate, because it is so uncertain and unreliable that no one can say what the morrow may bring forth.—A.

Isle of Wight.—The sixth annual meeting of the Isle of Wight Horticultural Improvement Association was held at Newport Town Hall on Saturday last. Dr. J. Groves, B.A., J.P., presided over a large attendance of members. After the minutes of the last annual meeting had been read and passed, the Hon. Secretary read a lengthy report of the work done during 1899, dealing with the finances, in which there is room for improvement, and of the excursions, which numbered six. A spring show was held at Ventnor, and a fruit show at Ryde. The membership roll has gradually increased from 308 to 427, a gain of 119 members. The report was adopted on the motion of the Chairman, after which the election of officers ensued. After the election of several new members, a social entertainment was held at Warburton's Hotel, at which songs and recitations were given by the members. The year has been one of progress for Island horticulture.—S. H.

December Weather at Hodsock Priory, Worksop.—Mean temperature of month, 34.3°. Maximum in the screen, 54.6° on the 4th; minimum in the screen, 64° on the 14th; minimum on the grass, 6.7° on the 14th; number of frosts, in the shade, 17; on the grass, 27. Sunshine, twenty-eight hours, or 12 per cent. of the possible duration. Rainfall, 2.33 inches. Difference from average, 0.23 inch. Rain fell on eighteen days. Maximum fall, 0.54 inch on the 28th. Rain from January 1st, 22.27 inches. Difference from average, 3 inches. The coldest December since 1892. Mean temperature, 10° lower than last year.—J. MALLENDER.

December Weather at Dowlais.—Rainfall 4.33 inches, which fell on twenty-one days; snow on eight days. Greatest rainfall 1.35 inch on the 28th; greatest snow 0.44 on the 11th. Temperatures: mean maximum 35.065°; highest reading 47° on the 1st, and did not rise higher than 23° on the 14th. Mean minimum 23.323°; lowest reading 7° on the 14th; below freezing point twenty-eight nights, and below 32° on thirteen days. The prevailing direction of the wind was N.E. and E. There were twenty-one sunless days. Very rough day on the 30th, with hail, rain, snow, thunder, and lightning at about 7 A.M., finishing with a sharp frost at night. Rainfall for the year 52.45 inches, which fell on 168 days. Average for the past thirteen years 48.051 inches.—WM. MABBOTT.

December Weather at Belvoir Castle, Grantham.—The wind was in a southerly direction twenty days. The total rainfall was 1.98 inch. This fell on fifteen days, and was 0.10 inch below the average for the month; the greatest daily fall was 0.46 inch on the 29th. Barometer (corrected and reduced): Highest reading 30.537 inches on the 3rd at 9 A.M.; lowest 28.355 inches on the 29th at 9 P.M. Thermometers: Highest in the shade 54° on the 7th; lowest 11° on the 14th. Mean of daily maxima 39.67°; mean of daily minima 29.00°. Mean temperature of the month 34.33°. Lowest on the grass 8° on the 14th; highest in the sun 85° on the 4th. Mean temperature of the earth at 3 feet 41.80°. Total sunshine, forty-four hours fifteen minutes. There were fifteen sunless days. The barometer reading at 9 P.M. on the 29th is remarkable, it being the lowest recorded here since June, 1894, previous to which date our records are imperfect.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Jan. 1890.										
Sunday 7	N.N.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday 8	S.S.W.	40.1	39.2	39.5	30.0	0.03	40.1	41.9	44.8	—
Tuesday 9	W.N.W.	37.6	37.0	48.1	28.8	0.13	38.5	41.9	44.8	—
Wednesday 10	N.W.	44.1	42.4	40.5	37.2	0.03	40.2	41.5	44.8	—
Thursday 11	W.N.W.	41.9	40.0	44.7	35.4	—	38.9	41.7	44.8	—
Friday 12	E.S.E.	34.8	33.0	40.9	33.9	—	37.9	41.5	44.6	—
Saturday 13	S.E.	35.1	34.8	42.4	31.6	—	37.8	41.2	44.6	—
		34.2	32.0	38.2	25.2	—	36.9	40.8	44.5	—
MEANS ..		38.3	36.9	42.0	31.7	Total 0.19	38.6	41.5	44.7	—

The weather during the first part of the week was dull and showery, the latter part being fine and bright, with very cold winds.

A Botanical Laboratory for Liverpool.—It is announced that Mr. W. P. Hartley, the well-known jam manufacturer at Aintree, is about to give £12,000 to build and equip a botanical laboratory at University College, Liverpool, in connection with the botanical school. This is the third gift from the same donor to the city.

Virginia as an Apple-producing State.—The Virginia State Commissioner for Agriculture, Hon. G. W. Koiner, issues an elaborate report from his department. It is freely illustrated. The Commissioner thinks that in ten years Virginia will be the greatest Apple-growing state in the Union. The trouble at present seems to be that the trees are not taken proper care of. If spraying was in general use in this state, as it is in others, the yield of many orchards would be increased 25 per cent., and the fruit therefrom would be of a quality to command the highest market prices.

Careful Gardening.—It is often said against amateur gardening that flowers, fruits, and vegetables can be bought in market cheaper than they can be raised. In some respects this is true; but usually the amateur is a long way ahead in the superiority of the articles. This is strongly in evidence by articles found in English markets. Though steam and electricity are pouring the best of their products from favoured orchards into England they are tame compared with that artificially raised by the best English gardeners. In the early part of July Peaches that would ordinarily be pronounced first-class, from Italy and other Nature-favoured places, brought 1s. 6d. a dozen. The products of the amateur garden were eagerly sought for at 12s.—("Meehan's Monthly.")

NATIONAL DAHLIA SOCIETY.

ANNUAL GENERAL MEETING.

THE annual meeting of this Society was held in the Hotel Windsor on Tuesday, under the presidency of Ed. Mawley, Esq. There was not a particularly large company present, and practically the whole of them were Dahlia specialists. Amongst those noticed were Messrs. R. Dean, J. Burrell, M. Seale, J. R. Tranter, A. Baxter, F. W. Fellowes, G. Gordon, H. A. Needs, C. E. Wilkins, W. Fife, S. Mortimer, G. Wyatt, J. T. West, and J. F. Hudson, Hon. Secretary. The last named read the notice convening the meeting, and scrutineers were selected for the ballot in the election of the officers of the Committee.

The official report proved the condition of affairs to be on the whole satisfactory, though, as with other of the special societies, the finances are not very flourishing. Reference was made to the decrease in the number of flowers exhibited at the Crystal Palace Show, which was accounted for by the extraordinary season through which the plants had passed.

In moving the adoption of the report and balance-sheet, both of which will be published in due course and forwarded to the members of the Society, Mr. Mawley said that, taking everything into consideration, the affairs were most satisfactory. At first glance, perhaps, the financial statement was not so good as it might be, but a study of the details, and a comparison with last year's returns, removed any doubt as to the flourishing condition of affairs. This was particularly the case when the two adverse Dahlia seasons just passed are borne in mind, as climatal fluctuations must of course militate more or less against the Society. Mr. Mawley made touching allusion to the death, in the prime of life, of his predecessor in the presidential chair, Mr. T. W. Girdlestone, and spoke of his services to the Dahlia Society and to horticulture generally. He said endeavour was being made to found a Girdlestone Memorial medal, and all friends of the deceased will wish the movement every success. In all respects, said the Chairman in conclusion, it was most desirable to keep abreast of the times, and in doing so, and propagating a love for Dahlias, increase in strength and prosperity year by year. After being seconded the motion was carried unanimously.

In subsequent remarks Mr. Mawley paid a tribute to the care and interest taken in the Society by Mr. J. F. Hudson, the Honorary Secretary, and congratulated the Society on having secured as Honorary Treasurer Mr. C. E. Wilkins of Swanley Junction, whose services will undoubtedly tend towards the Society's benefit. It was necessary, he pointed out, to reduce the prize money to a small extent, and this was done after a considerable discussion of the several classes in the schedule.

It was decided to hold one show only this year, and naturally everyone is hoping for a favourable season, which usually means a handsome exhibition. In addition to the several special prizes in the schedule, Mr. F. W. Fellowes suggested the inclusion of a class for nine varieties of Dahlias, grown and shown in pots, for which he would provide a £3 3s. cup, or the cash if preferred. This generous offer was accepted with thanks. A number of new bye-laws, mainly having relation to the affiliation of provincial societies, were proposed and carried; some other routine business concluded the meeting.

DECADENCE IN WALL TREES.

How forcibly does the wall of beautiful Pears, photographically represented on page 3 two weeks ago, contrast with the curious examples of trained trees which occupy so many garden walls in these modern days! Yet the present quick method of covering walls, the upper parts especially, has no lack of defenders, who like to regard themselves as advanced gardeners. "Advanced" they no doubt are in many things, but in the training of wall trees they are at the least a generation behind the old past masters in the art of gardening.

The modern go-aheads are in such a hurry that they have no time to train the branches well and at proper distances, so they flatten them against the wall as best they can. A few may be straight, but most of them will be the other way. By this so-called quickly-covering space system, which they think so good, we are almost certain to see, during the first two or three years, the strong branches where the weaker ought to be, and these latter in the rightful places of the strong. And then what? Just this: In a few more years the weaker lower branches dwindling away, and the stronger rising luxuriantly 3 or 4 feet above the top of the wall when the "summer pruning" (save the mark!) is done in or about September. If you have the temerity to whisper that the trees appear to have exalted notions, and do not seem to like humbling themselves by growing along the lower part of the wall, you will most likely be told "they always was so," and then you may listen for a delightful example of making a virtue of necessity. "Yes, they always was so; but they make fine room for Tomatoes. We have to go in for 'stuff' here, I can tell you."

Let us reflect a moment. Suppose Mr. Luckhurst, instead of selecting the right number of branches and knowing how to treat them for attaining his object, had allowed twice the number to extend as soon as they could after planting and let them go where they would the most easily; then imagine his filling the inevitable blanks on the lower part of the wall between them with Tomatoes, and nearly thirty years afterwards showing the result in a photograph. The wall must in this case have been a veritable eyesore, and not half of it clothed with fruitful wood; whereas now, as few will deny, it is strikingly ornamental—the branches and spurs uniform in vigour in every part and capable of bearing as many fruits as trees could carry. They are splendid examples of cultural skill carried out on intelligent lines and represent productiveness with economy.

The last word may startle some advocates of the express system who "run up" young Pear and other fruit tree branches too close by half as far as they will go, and "tack" them here and there with all due celerity for getting "ropes of fruit" in the least possible time. It is in reality an exhaustive practice. The crushed and crowded leaves are debilitated, and consequently the resources of the soil cannot be utilised by conversion into the first essentials of health and fruitfulness for storage in the stems and buds. Thus the bearing parts are quickly worn out, and have to be removed and others "laid in" to take their places. With fewer and better managed branches from the first, the leaves of these branches have twice the elaborative power of those which have had no chance of proper development.

No man who really understands the art of training trees into specimens of beauty and fruitfulness—for these desiderata are not in the least antagonistic—can inspect a number of well formed trees in any of our leading nurseries without a feeling of sadness creeping over him when he is compelled to think that many, if not the majority of the trees are destined to be spoiled. It is true that some nursery trees have more branches than they ought to have, as these are to be seen only 4 to 6 inches apart. They would be better if only half the number, and the first thing a man like Mr. Luckhurst would do would be to correct them. Unfortunately too many into whose hands such trees fall do nothing of the kind. They not only retain every branch its full length, and do not shorten the leader if 4 feet long, but as soon as they can "tack in" still more growths between the already too numerous mains, and thus lay the foundation for ruining the tree.

It is a simple fact that hundreds, aye! thousands of trees, which had been given a good start by skilled nurserymen, are subsequently ruined, and the wall space they were intended to cover ornamentally and profitably never will be covered by them. As a matter of fact more than half of the trees will, by the time they have been in their permanent position three or four years, be in such a deplorable state that even the nurseryman himself could not remodel them otherwise than by "stumping," or cutting the branches boldly back and forcing latent buds, if possible, and obtaining new growths from the base for a new start; but this desire he would find difficult to accomplish, because some of the lower and weaker branches would be so stunted and indurated, with weak blossom buds along their entire length and a terminal cluster at the extremity, that there would not be a bold wood

bud to cut back to with any confidence of its producing a strong "kind" growth for developing into a satisfactory branch; while on the upper part of the tree the branches would be four times more rampant than they ought to be in comparison with the stunted weaklings below them.

Two gardens are known at this moment to the writer in which a hundred young wall trees were planted four years ago. All the dwarf trees, and excellent trees they were, had leaders and side branches. The leaders have not been shortened yet. Some of them, that did not form terminal fruit buds for arresting their further progress, are at the top of the wall, and have thrown a side branch here and there of varying lengths and irregular distances, while most of the lower branches are so thin, lean, and stunted that they cannot do otherwise but dwindle away, and leave more room than before for the precious Tomatoes. "Good crop, isn't it?" observed one of the Tomato trainers, taking no notice of and making no reference to the smothered lower parts of the trees and the rampant unruly growths above.

The splendid Pear wall referred to—probably the finest of the kind in the kingdom—ought to prove an eye-opener to students of a neglected art. Let them look at the illustration on page 3 read the accompanying notes with care, and regard the lesson conveyed as a new year's gift not to be lightly disregarded. They will there see that the branches are the longest at the base, and decrease in length upwards; that every inch of a wall may be furnished with bearing wood instead of having the top-heavy trees that are so common. They will see that with the branches not less than a foot apart there is space for leaf-development, that sap-pressure is nicely balanced by the horizontal and vertical parts, and that the spurs are consequently equalised in strength; and moreover that trees thus formed require less time in attention to disbudding, pruning, cleansing, and occasionally refixing the branches than must be involved in conducting those operations when twice or thrice as many so-called branches have to be treated. Mr. Luckhurst has done a public service by his effective object lesson, and he can add to its value and the obligation of many readers by showing the working details for building up of such distinctly handsome, serviceable, and entirely meritorious trees.—A. N. O.

STAPELIA ASTERIAS.

Of all the members of the vegetable kingdom there is scarcely any which exceeds the *Stapelias* in quaintness of outline and floral extravagance. They are included in an exhibition section known as succulenti, and which also comprises the *Cactus*, the *Cereus*, the *House Leek* (*Sempervivum*), the *Crassula*, the *Echeveria*, the *Mesembryanthemum*, the *Opuntia*, and many others of high-sounding titles.

The Starfish *Stapelia*, or, as it is frequently designated, the Toad Flower, ought most certainly to have a place in all collections of plants whose owners desire to possess the curious as well as the beautiful. As may be seen in the illustration (fig. 10), the flower is very striking. The colour is a purple brown, mottled with yellowish white. *Stapelias*, like most succulenti, are not fastidious in the matter of soil, liking a sandy one, in which plenty of lime rubbish has been mixed to make it porous. They should be kept on a shelf well up to the light, and given very little water in the winter time, but abundance in the summer, sprinkling the plants, and not watering at the roots. On summer afternoons they should be shut up in a close moist atmosphere, when the odour emitted is peculiarly noticeable.

NOTES ON SEAKALE CULTURE.

THIS hardy perennial of our kitchen gardens is a native of the seaside, and is found growing on the shores of Britain. There are several varieties, the best of which is Lily White, which is chiefly esteemed because of the absence of the purple tip to the shoots. Beddard's Improved is another good variety, a cross between Lily White and the old purple variety, combining the best characteristics of both.

All the varieties may be raised from seed, though it is a slower method than planting roots. Seed should be sown in March, preparing the soil deeply previously. Sow in rows 18 inches apart, making the soil fine, and drawing drills with a hoe or rake. When the seedlings push through the soil hoe between the rows slightly to encourage growth, and thin the plants as soon as possible to 9 inches asunder. The following season lift the roots and replant, or what may be better, lift every other root and plant these in rows 18 inches to 2 feet apart, the roots being placed 15 inches asunder. The following season the roots will be strong enough to force, or the crowns may be covered

with pots in early spring to blanch the growth when it pushes, but it cannot be obtained so early by this method.

The plants will be stronger the third year, especially if growth is encouraged by the application of manures, such as guano 1 oz. per square yard applied in June. Salt is also beneficial at the rate of 1 oz. per square yard given between May and July.

Old roots are the best for lifting and forcing, and a portion of the stock may be treated in this way every year after the foliage has

18 inches, in rows $2\frac{1}{2}$ feet asunder. To maintain the stock this method should be followed each year.

The forcing of Seakale is carried out in various way, but heat, moisture, and darkness are essential. A hotbed is a suitable place, surrounding the roots well with soil and excluding light from the crowns. Planting the roots thickly in boxes or pots of soil and covering the crowns, then placing the receptacles in a moist and well heated structure, is a handy method of producing blanched leaf-

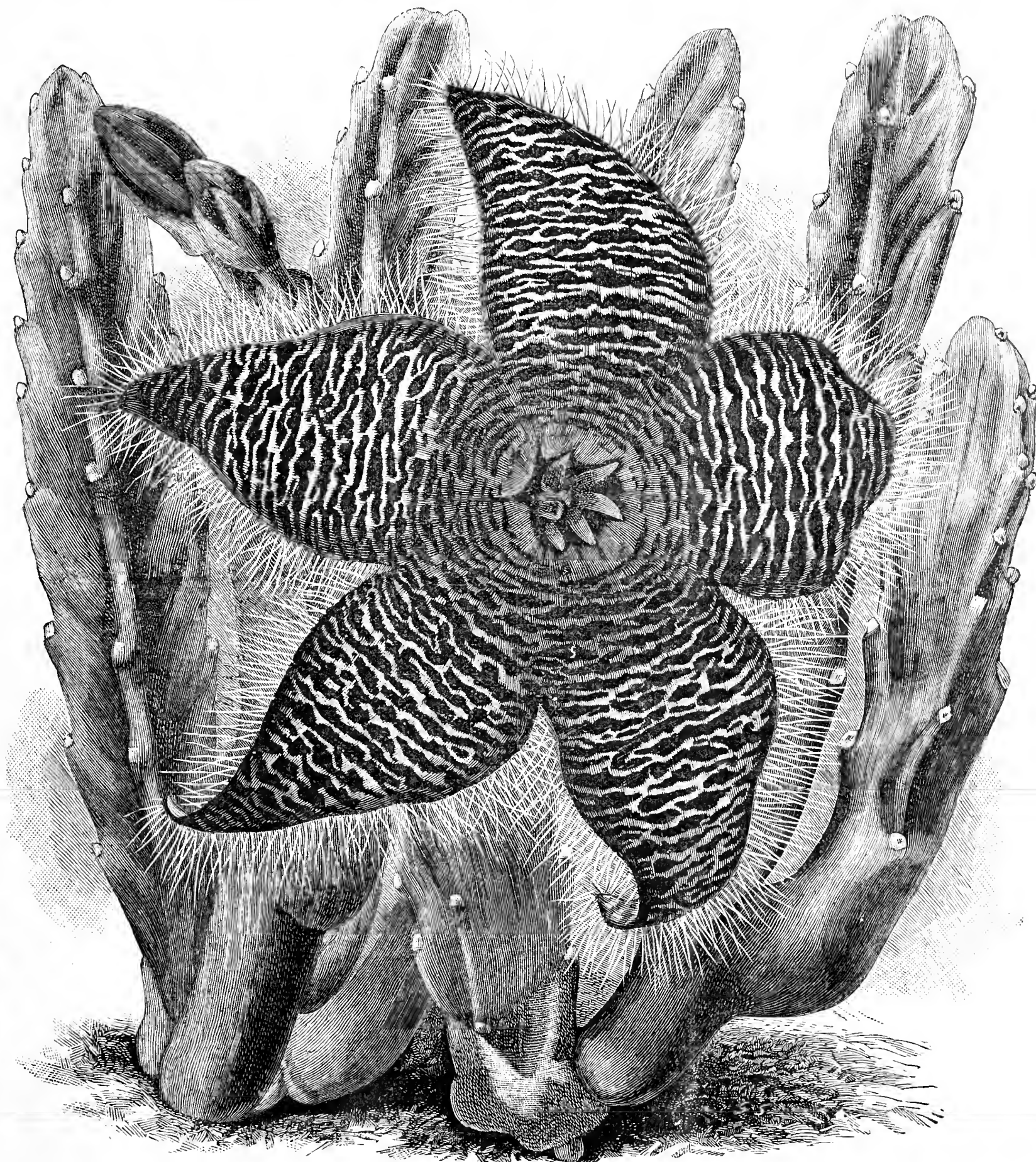


FIG. 10.—STAPELIA ASTERIAS.

died down in November. The thick, strong roots must be selected for forcing, cutting off the thin, thong-like roots and preserving them for future planting. These may be prepared for planting by cutting them into lengths of 6 inches, cutting the upper part transversely and the lower part slantingly, so as to distinguish the crown end. Lay the roots in sand or ashes until March, when they can be planted. By that time the upper part of the roots will have produced a ring of growth, or little buds. When the roots are planted the buds will advance, but eventually only allow the strongest to remain. The distance between the roots may be, in good soil,

stalks for early use. To maintain the supply introduce roots into heat in successive batches. Later in the season a good supply of blanched produce may be secured by covering the roots with Seakale pots or tubs, which are handy by reason of their having movable covers or lids.

Seakale is often obtained early by forcing the roots where they are growing. For doing this the crowns must be covered with pots having movable lids. Fresh growth from the root is desirable, and this can be had by thinning out the buds which are produced.—E. BARROW.

BEGONIA SOCOTRANA.

ABOUT twenty years ago this handsome species was introduced to Kew from the island of Socotra by Dr. Balfour, and a few years later it was put into commerce by Messrs. Veitch. On first flowering it was found to possess the qualities of a first-rate garden plant, and hopes were also entertained that it would prove useful to the hybridist. That it has fulfilled the promises of its early days is quite evident, for besides being a most useful and showy winter flowering plant, it is one of the parents of the new race of winter flowering Begonias typified by *B. Gloire de Lorraine*.

In general appearance it differs from most other species. It is included in the tuberous section, but differs from other members by making a large number of small bulbils instead of one single tuber. The leaves also differ from those of other species by being quite round, with a cup-shaped depression in the centre. From each bulbil a stoutish stem is made a few inches high, on which from four to six of the handsome, bright green leaves—which are from 4 to 6 inches across—are borne. The flowers are produced in medium-sized, loose trusses well above the leaves; they are bright rosy red, and 2 inches across.

Unlike other species, this requires resting during summer, and should be kept perfectly dry from the time the leaves fall until August. At the beginning of this month the tubers should be divided, and potted several together in 3-inch pots in a mixture of loam, leaf soil, and peat in equal proportions, with a fair quantity of sand added. They should be placed in a house having a minimum temperature of 55°, and little or no water given until growth has commenced. After leaves appear the plants should be grown quickly without a check, potting when necessary until they are in 6-inch pots. When the pots are filled with roots liquid manure should be given. Under this method big plants should be obtained, which will flower from the end of November onwards for at least two months.—W. D.

HARDY VINES FOR THE OPEN.

I WISH to thank the various correspondents for their interesting notes on outdoor Vines, on pages 468, 496, 520, and 541. I am particularly obliged to "F. S., Dumbarton," for giving his experience so far north as Scotland, and hope he will favour us with further notes this year; also to Mr. H. M. Tod for the list of sorts he has found to ripen early, and those that are uncertain to ripen. The suggestion that not only the unripe fruit, but the superfluous green growth of Vines, with sugar added, will make wine equal to ripe fruit is worth knowing, as there are always an abundance of surplus growth. There are various ways in which unripe fruit can be used instead of wasted. This and the thinnings of Grapes can be utilised for tarts or simply stewed, but the best way of using the fruit at any stage, particularly by those who have only a small or a moderate quantity, is in the form of Green Grape jelly, which is very good.

Mr. Tod mentions American Brandt. It would seem this variety is fairly satisfactory, but are there not several of the American varieties which would succeed in our climate? Perhaps some of the readers of "our Journal" will give their experience with these.

It would be most interesting, and in all probability useful, to set about cross-breeding, so as to produce finer sorts and earlier ripening varieties than any we now possess. This has already been brought about with other fruits, and splendid results have been achieved. Only a few days ago I was told by an ex-soldier that he saw in the cold parts of Abyssinia splendid large Grapes growing in the open, of good quality. They were simply planted on hillocks, the branches resting on the ground. Can anyone give any information on this variety?

"Wanderer" mentions Reine Olga Grape as being easy to grow in the open. Will someone kindly give their experience and any information of this Grape, or any other hardy variety they have found a success?

Enclosed I send a newspaper cutting, showing that vineyards were established in England before the Norman conquest, and that Lincoln was one of the places where they were grown—presumably on the southern slope of the hill, where we now have a street called "Vine Street."—W. B., Lincoln.

[The "cutting" referred to is from the "Globe"—a long narrative of old English vineyards, and concludes as follows:—"Old Vines still adorn the south walls and sunny gables of many cottages and farm-houses in the southern counties of England, and in favourable seasons a fair yield of Grapes may be obtained. These wall Vines are so picturesque that one would fain hope the day is far distant when they will be superseded by more showy creepers. But to attempt to revive the systematic cultivation of the Grape, with the view of producing wine which should compete in any degree with the growths of foreign vineyards, would be perfectly hopeless. An isolated experiment, conducted with unwearying labour and pains, like that of the Marquis of Bute, when circumstances are favourable, and when profit is no object, may meet with some degree of success. But from a commercial point of view such efforts are practically foredoomed to failure. English wines played a useful part in the past, and doubtless satisfied palates imperfectly educated, and not too fastidious; but beverages which, in the expressive language of the old chronicler, 'twisted the mouths of the drinkers,' would have few attractions for modern consumers."]

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL GENERAL MEETING.

THE annual general meeting of this estimable Institution which was held under the presidency of Mr. Harry J. Veitch at Simpson's Hotel on Friday last, did not bring together a very large gathering. Amongst the best known horticulturists present were Dr. Maxwell T. Masters, and Messrs. G. Monro, W. Roupell, W. Denning, J. Fraser, H. J. Cutbush, G. Wythes, J. H. Veitch, J. Willard, A. G. Monro, T. Manning, and Ranger Johnson. After the Secretary had read the minutes of the previous annual meeting, Mr. Veitch rose and put the following proposition, which was adopted without a dissentient voice:—

"That this general meeting of subscribers of the Gardeners' Royal Benevolent Institution desires to place on record its deep sense of the very grievous loss sustained by the Institution through the death of its President, the late Duke of Westminster. It also gratefully records the great interest always evinced by his Grace in the well being of the Institution and the liberality he continually showed during the twenty-one years that he occupied the office of President."

The Secretary then read the report and balance-sheet as follows:—

REPORT OF COMMITTEE FOR 1899.

The Committee in submitting their annual report for the year 1899 again have the great satisfaction of congratulating the members and subscribers on the prosperous condition of the Institution and the marked progress which happily has been made during the year, not only in respect of its financial status, but also in dispensing its assistance to a greater number of old and worthy people whose circumstances and necessities have obliged them to seek its aid.

At the beginning of the year 174 pensioners—ninety-five men and seventy-nine widows—were receiving £20 and £16 a year respectively, entailing an annual liability of £3160. Of this number during the year nine men and one widow have passed away, while another man whose circumstances have changed has voluntarily relinquished his pension; thus leaving a total number of 163 on the funds at the close of the year. The Committee propose to increase this number, and recommend that sixteen pensioners be added—ten by resolution under power conferred by Rule iii. 5, and the remaining six by the votes of members and subscribers, giving a total number of 178 pensioners, being four more than the number on the corresponding date last year. The number of beneficiaries will then be larger than at any period of the Institution's past history; and whilst keenly alive to the increased liabilities necessarily to be incurred, the Committee are also confident they may rely upon the continued and increased support of the friends of the Institution.

The Committee have to report that the anniversary festival dinner in aid of the funds, under the presidency of the Right Hon. the Earl of Derby, K.G., P.C., proved most successful, and they desire to place on record their grateful thanks to his lordship for his able and effective advocacy of the claims of the Institution, which resulted in such a substantial addition to the funds, as well as for his lordship's own generous contribution. In reply to the vote of thanks tendered by the Committee, Lord Derby was pleased to send the following communication:—

Derby House, St. James's Square, W.

July 3rd, 1899.

My Dear Sir,—I thank you for your letter of this date conveying the kindly message sent by your Committee with reference to the festival dinner of the Gardeners' Royal Benevolent Institution on the 28th ult. I am very glad to learn the result of the dinner is considered to have been satisfactory. For my own part I certainly say that I am very happy to have attended so pleasant a gathering, and that I am sincerely grateful for the assistance and support which I received as your Chairman from all present, and especially from the Treasurer and yourself.—I remain, my dear Sir, yours very faithfully,

(Signed) DERBY.

GEORGE J. INGRAM, Esq.

The Committee take this opportunity of gratefully acknowledging their indebtedness to the Stewards, donors of flowers, and the horticultural press, and to others who in any way contributed to the success of the anniversary. They likewise tender their best thanks to the Honorary Secretaries of the several auxiliaries for their kind services, and also to other friends throughout the country, who, by arranging concerts, flower stalls, opening their gardens, and in other ways have so materially assisted the Institution. The Committee are glad to announce the formation of an auxiliary at Reading under the presidency of Charles E. Keyser, Esq., and the treasurership of Arthur W. Sutton, Esq., which they feel will be of great advantage in diffusing fuller information of the Institution and creating a wider interest in its work in that district. Their thanks are specially due to Mr. Sutton, to whose influence and indefatigable exertions the establishment of the branch is due.

To the Messrs. N. M. Rothschild & Sons, who have again contributed their generous annual gift of £105; to the anonymous donor who left four £5 notes at the office "In Memory of Robert Fortune;" and to other friends too numerous to mention who have so generously given to the funds, the Committee offer their most grateful thanks.

The Committee are glad to be able to announce that the additional sum required to complete the "Victorian Era Fund" has been obtained, the total amount thus raised for this fund being £5000, which has been invested in Great Western Railway 5 per Cent. Consolidated Stock, the interest derived therefrom, it may again be stated, being devoted exclusively to the benefit of unsuccessful candidates who have been subscribers to the Institution.

During the year the following persons have benefited from this Fund, and the grateful letters which have been received from them show how much the help was needed, and how keenly it was appreciated:—David Benning, £8; Andrew Bryan, £10; Sarah Bullen, £5; George Chitty, £10; Jane R. Edwards, £10; Thomas Evans, £5; John Gibbons, £10; William Gould, £2; Elizabeth Hackwell, £8; Samuel Mills, £6; Lucy Mitchell, £7; Francis Nixon, £10; William Thomas, £2; Isabella Watt, £10; George Wills, £10. Two of the above have since passed away, and the timely aid thus afforded to them was doubly acceptable.

The Committee have also to announce that the Good Samaritan Fund, which was inaugurated at the commencement of the year, has received contributions to the amount of £520 17s. Of this amount £520 has been invested in 2½ per cent. consols. The object of this Fund is to grant temporary relief in urgent cases of trouble and distress. The Committee therefore very earnestly commend the Fund to the practical sympathy and support of their friends.

In concluding their report, the Committee have to refer with great regret to the losses the Institution has sustained during the past year by the death of many supporters, amongst whom they have to record with deep sorrow that of their valued and generous President, the Duke of Westminster. His Grace had occupied the office of President for a period of twenty-one years, and throughout the whole of that time had evinced a warm interest in its work, and was ever ready to afford it his powerful aid, both by his advice and practical support. His Grace will be greatly missed, and the Committee deeply deplore his decease. They have also to refer to the death of their old friend and colleague Mr. John Lee. He has been connected with the Institution for sixty years, and as Chairman of Committee and Trustee for many years had taken an active interest in its affairs. He died at the ripe old age of ninety-six, beloved by everyone, and warmly appreciated for his devoted services to the Institution. The Committee have likewise to record their great regret at the death of their colleague Mr. M. Dunn of Dalkeith and they desire to take this opportunity of expressing their high appreciation of his efforts on behalf of the Institution.

These many losses have created gaps in the ranks of the supporters of the Institution which it will be difficult to fill, and the Committee therefore plead the more earnestly for new friends and helpers to take the places of those who have passed away.

Dr.		BALANCE SHEET, 1899.	
To Balance	...	£975 11	4
„ Amount on deposit	...	2692 10	0
„ Annual subscriptions	...	£1574 5	6
„ Donations at Festival, &c., including collecting cards	...	1560 6	10
„ Donations, Victorian Era Fund	...	383 12	6
„ „ Good Samaritan Fund, including legacy from the late Mr. John Lee	...	520 17	0
„ Return of income tax	...	24 11	3
„ Advertisements in annual list	...	38 17	0
„ Dividends and interest	...	912 7	9
		5614 17	10
		£8682 19	2

Cr.			
By Pensions and gratuities	...	£3011 17	0
„ Expenses of annual meeting and election	...	14 19	9
„ Secretary's salary	...	£275 0	0
„ Office assistance	...	26 10	0
„ Rent of office, firing, lighting, &c.	...	67 3	1
		368 13	1
„ Printing, including annual reports and lists of subscribers, appeals, &c.	...	102 0	0
„ Stationery	...	26 7	6
„ Expenses Festival	...	£165 10	1
„ Less dinner deductions	...	90 6	0
		75 10	1
„ Wreath, the late Mr. John Lee	...	3 3	0
„ Advertisement	...	3 3	0
„ Postages, including reports, voting papers, appeals, &c.	...	50 14	6
„ Travelling expenses	...	9 4	8
„ Carriage, telegrams, and incidental expenses	...	8 12	0
„ New office safe	...	7 17	6
„ Bank charges	...	0 3	0
		286 15	3
„ Transferred, Victoria Era Fund	...	383 12	6
„ „ Good Samaritan Fund	...	520 17	0
„ Amount placed on deposit	...	3115 10	0
		4019 19	6
„ Balance with Treasurer	...	980 6	0
„ „ Secretary	...	0 8	7
		980 14	7
		£8682 19	2

VICTORIAN ERA FUND. BALANCE SHEET, 1899.

To Balance	...	£565 10	6
„ Dividends	...	£127 3	4
„ Donations	...	353 12	6
„ Returned income tax	...	3 19	4
		514 15	2
		£1080 5	8

By gratuities to unsuccessful candidates	...	114 10	0
„ Purchase of £503 Great Western Railway 5 per cent. Cons. Stock, at £182½	...	916 14	4
„ Commission (reduced)	...	3 6	3
„ Stamps and fee	...	4 18	6
		924 19	1
„ Balance	...	40 16	7
		£1080 5	8

GOOD SAMARITAN FUND. BALANCE SHEET, 1899.

To Donations	...	£520 17	0
		£520 17	0
By Purchase of £523 15s. 8d., 2½ per cent. Consols at 99½	...	519 4	0
„ Commission and stamps	...	0 16	0
		520 0	0
„ Balance	...	0 17	0
		£520 17	0

Having audited the accounts, we certify the same to be correct; the books are well and accurately kept. We have also satisfied ourselves that the securities of the invested funds are in the hands of the bankers, through whom the dividends are remitted.

THOMAS SWIFT,
THOMAS MANNING, } Auditors.
J. WILLARD,

9th January, 1900.

Mr. Veitch in moving the adoption of the report and balance sheet was as usual brief and very much to the point. He considered the affairs of the Institution as shown in the official statements to be in a most satisfactory state, indeed he said the year 1899 was to be characterised as the most successful in the annals of the Society. He referred to the completion of the Victorian Era Fund, and also to the fact that the Good Samaritan Fund, which was first mooted a year ago, was already firmly established, and did not doubt but that, as in the case of the first-named fund, it would prove of inestimable value in giving temporary relief to necessitous cases. He then moved:

"That the report of the Committee, together with the statement of accounts, as audited and certified, for the past year now read be received and adopted, and that the best thanks of this meeting be presented to the Committee for their able management of the affairs of the Institution for the past year." Dr. Masters seconded the proposition, which was carried unanimously.

The following elections of officers was promptly proceeded with, and in no case was there a single objection raised.

"That Mr. Harry J. Veitch be re-elected Treasurer, and that the best thanks of this meeting be presented to him for his invaluable services to the Institution for the past year." Proposed by Mr. W. Denning, seconded by Mr. Osborn.

"That Mr. George J. Ingram be re-elected Secretary." Proposed by Mr. Geo. Monro, seconded by Mr. Geo. Wythes.

"That Messrs. W. Y. Baker, J. Hudson, S. M. Segar, H. Turner, and H. Tillman, who retire by rotation, be re-elected members of Committee, and that Messrs. John A. Laing and John Jennings be elected members of Committee in the places of Mr. John Laing, who retires, and Mr. M. Dunn, deceased." Proposed by Mr. H. J. Cutbush, seconded by Mr. W. Roupell.

"That Messrs. Thomas Manning, Thomas Swift, and Jesse Willard be re-elected Auditors for the ensuing year, and that the best thanks of this meeting be presented to them for their kind services during the past year." Proposed by Mr. J. Hill White, Worcester; seconded by Mr. W. Denning.

"That Messrs. W. F. Besté, W. Crane, H. Higgins, W. Johnson, and R. A. Jack be re-elected Arbitrators for the ensuing year." Proposed by Mr. A. J. Baker, seconded by Mr. W. Ieeton.

"That William Armstrong, Andrew Bryan, Thomas Chapman, George Chitty, William Hole, Francis Nixon, Samuel Smalley, Richard H. Smith, Joseph Willis, John Wilson, whose cases have been investigated and appear to be deserving and necessitous, be placed on the pension list without election under the power conferred by rule iii, 5." Proposed by Mr. J. H. Veitch, seconded by Mr. S. Osborn.

"That Mr. Edwin G. Monro and Mr. Thomas Manning be elected scrutineers, with full power to decide all questions arising out of voting papers." Proposed by Mr. W. Roupell, seconded by Mr. W. Ieeton.

DECLARATION OF THE POLL.

Shortly before five o'clock the scrutineers, Messrs. Thos. Manning and A. G. Monro, returned to declare the result of the poll, which was as follows:—Isaac Page, 4519; Lucy Mitchell, 4282; Jane R. Edwards, 3986; Thomas Evans, 3383; William Thomas, 3228; Isabella Watt, 2845. William B. Glasscock received 3346 votes and would therefore have become a recipient of the pension but for the fact that since the list was published his circumstances had so changed as to render pecuniary aid from the Institution unnecessary. It was mentioned as remarkable that since the list had been ready four candidates had passed to their eternal rest. The scrutineers announced as a matter for congratulation that only thirty-seven votes were wasted this year through papers not being signed, as against nearly 600 last year.

Votes of thanks to the Chairman and Messrs. Manning and Monro brought the proceedings to a close.

THE ANNUAL FRIENDLY SUPPER.

There is probably no gathering of horticulturists, at any rate within the metropolitan area, that better deserves the title of "Friendly" than this meeting of the supporters and friends of the Gardeners' Royal Benevolent Institution. It would, we are perfectly convinced, be a difficult, even if not an impossible, task to find another charitable institution that runs its course on a sounder basis. In investigating its affairs by the aid of reports and balance-sheets and from information gathered in conversation with the best of secretaries, Mr. G. J. Ingram, it is promptly found that the subscriptions and donations are not sought for the maintenance of ornate buildings and ornamental officials, but for the gardeners of Great Britain and Ireland. The money comes and the money goes, not perhaps with the regularity of the ebb and flow of the tides, but steadily and persistently, and with the exception of an infinitesimal percentage for office expenses, every halfpenny goes to the gardeners and their widows in their hour of need.

Having in view this incontrovertible fact that a committee of earnest business men manage the affairs of the Society for the benefit of gardeners, it might naturally be asked, "Do the gardeners give the Institution the pecuniary support it deserves?" Many times has a negative answer been recorded; but it requires qualification. There are gardeners and gardeners, and, as Mr. Moss observed, they are not all millionaires. Many there are who could subscribe and do not. This is not from feelings averse to the work of the Society, but rather from an unfortunate apathy which we anticipate the ever increasing auxiliaries will eventually remove. Look, however, for a moment on the other side of the slate, and there will be found a large majority whose remuneration for intelligent labour is decidedly limited, and who have many pressing home calls. Should these people be excluded from the benefits of the charity? Mr. Veitch, in founding the Good Samaritan Fund, replies with an emphatic No. And he is right—it is the man's misfortune, and not his fault in this case.

But we are digressing and must return to the leadership of Mr. Arnold Moss, who occupied the chair on this occasion in place of Mr. Bilney of Weybridge, whose presence at home was enforced by the influenza fiend. Mr. Moss, in dryly humorous terms, referred to the report and the balance sheet, and kept the half hundred participators in the supper in a constant roar of happy laughter ere settling down to serious business. When this stage was reached he referred to the regrettable absence of Mr. Bilney, and also to the death of the President of the Institution—his Grace the Duke of Westminster. He spoke of the flourishing condition of the Society, and hoped the prosperity would be maintained in the future. He alluded in most complimentary terms to the good work of gardeners, whose labours were not always of the easiest or of the pleasantest, and the tone of his remarks proved his familiarity with them and their work, and the high esteem in which he held them. He asked all present to drink to the increased prosperity of the Gardeners' Royal Benevolent Institution, and there was no traitor in the camp.

This toast has for years past been supported by Mr. Harry Veitch, but on this occasion a change was necessary, as this gentleman was precluded from being present on account of his almost immediate departure (with Mrs. Veitch) on a tour to the Holy Land. The task was therefore delegated to Mr. George Monro, and he handled his duties most capably. He spoke of the amounts subscribed and of the number of people now enjoying the benefits of the Society, and paid a thoroughly deserved tribute to Mr. Veitch when adverting to the Victorian Era and Good Samaritan Funds. Reference was also made to the possibility of the war now unhappily in progress in South Africa affecting the returns during the present year, and exhorted all and sundry absent as well as present to do their utmost to keep the Institution in the foreground, and by annual subscriptions help materially towards its permanent prosperity. Mr. Monro's remarks were terse and well chosen, and it is sincerely to be hoped that they will bear abundant fruit.

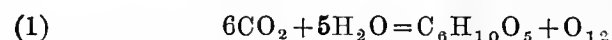
Mr. Owen Thomas, whose interest in the Institution is second to none, proposed the toast of "Our Country Friends and Supporters," and, as is ever his motto, urged gardeners to increase their support to a Society that was so entirely beneficial to the craft. He referred to the admirable work of the auxiliaries, and looked for their extension. Mr. George Bunyard responded. Other toasts were proposed and received in the most excellent spirit, ere a most enjoyable meeting was brought to a close.

THE ATMOSPHERE, AND THE ATMOSPHERIC FOOD OF PLANTS.

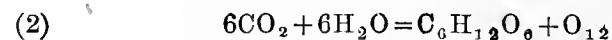
(Concluded from page 31.)

It is from this small proportion of carbonic acid gas (4 gallons to 10,000 gallons) in the air that plants get the carbon (charcoal) that forms so large a part of their solid substance. The way in which they take it in is something like this:—

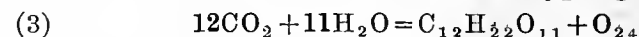
The green colour of green leaves is due to very small and very numerous green granules contained in cells in the interior of the leaf. This green substance is called chlorophyll. These same cells contain also the ever-moving living liquid jelly-like protoplasm, which has been described as the life-substance of the plant. Through the outermost thin transparent skin, or pellicle, covering the leaf there are numerous microscopic pores, or openings or mouths, called stomata or stomates, communicating with these green cells. Now, through these stomata the carbonic acid gas of the air reaches the chlorophyll in these cells; and, under the action of the sunlight, the chlorophyll (in the presence of moisture and protoplasm) breaks up the carbonic acid, causing it to give up the whole or part of its oxygen, which then returns to the atmosphere, and building up the carbon and the remainder of the oxygen into starch, dextrine, all the sugars, the gums, and cellulose or woody fibre, and other plant tissues. Water, drawn from the soil by the roots and passed up into the stem and leaves, is necessary for these tissue-building vital processes. Indeed, all the substances just named—starch, sugars, &c.—contain nothing but carbon combined with the elements of water (hydrogen and oxygen). The transformations can be expressed by the following chemical equations, in which CO₂ always means carbonic acid gas, H₂O water, C₆H₁₀O₅ starch, dextrine, gum, and woody fibre or cellulose, C₆H₁₂O₆ fruit sugar, honey, &c., and C₁₂H₂₂O₁₁ cane sugar. The equations would then be—



—meaning that 264 lbs. of carbonic acid and 90 lbs. of water would make 162 lbs. of starch or woody fibre, and 192 lbs. of oxygen gas.



—meaning that 264 lbs. of carbonic acid and 108 lbs. of water would make 180 lbs. of fruit sugar and 192 lbs. of oxygen gas.



—meaning that 528 lbs. of carbonic acid and 198 lbs. of water would make 342 lbs. of cane sugar and 384 lbs. of oxygen gas.

(In all chemical equations C counts for 12 parts of carbon, O for 16 parts of oxygen, and H for 1 part of hydrogen.)

In the dark the green chlorophyll has not the power of thus breaking up carbonic acid and water and constructing the plant-substances named above from the materials. There are therefore four conditions absolutely necessary for this plant-building business:—

- 1, Carbonic acid gas in the air;
- 2, Green chlorophyll granules in the living plant;
- 3, Moisture from the soil;
- 4, Exposure to the sunlight.

The part that light plays in assimilation of carbon and the growth of plants is apt to be overlooked. It is just as necessary as the carbonic acid of the air or the chlorophyll of the green cells. The disastrous effects of insufficient exposure to light are readily observed. We have an instance of it in the straggling, stunted, starved condition of the trees in the middle of an overcrowded forest or patch of bush. The weaklings there, shadowed by their taller and more umbrageous neighbours, begin to lag from the insufficiency of the light that reaches them. One often sees an unlucky plant of this kind spending all its available nourishment in stretching up a tall, slim, scraggy stem, carrying its leaves as high as possible to reach the open air and get a glimpse of the sun, turning now this way, now that, in search of a patch of light.

The abundance of light and their free and full exposure to it are partly the reason why the individual plants of a thinly sown crop (other things being equal) are more vigorous than those of a dense crop, because they have fewer neighbours to shadow them. Everyone has observed the meagre growth of the grass grown in the shadow of a lofty belt of leafy trees. This is mainly due to the lack of plant food, but partly also to the want of light. Also note the vigorous rush-up, brightening green colour, and rapid growth of the young grass that has just been relieved of the overshadowing crop of Barley or Oats, among which it was previously struggling to maintain a precarious existence.

The rapid growth of Barley and Rye, and even Wheat, in the Orkneys, Norway, Sweden, and in cold Siberia as far north as 66° and 70° of latitude in the long, almost continuous summer days has been attributed partly to the same cause—namely, the continuous exposure to sunlight which the plants enjoy in the short summer of these northern latitudes.

We have another instance of the influence of light in the well-known superior fertility of the sunny slope on which the plants are exposed to the direct perpendicular rays of the sun; while on the adverse slope (quite irrespective of the cold) they struggle on in a meagre, hopeless way, feeling the solar influences for shorter periods, and with less directness in his beams.

CUSCUTA CHILENSIS.

THE profusion in which the very pretty fragrant flowers are borne over the whole of this leafless plant cannot but excite admiration, nor can its habit of growth and the inevitable consequence of its vigour, when growing on many of its foster plants, occasion any but feelings of wonderment. It has been cultivated under the erroneous name of *C. chinensis*, a species of only annual duration, whereas the one under notice is indisputably a perennial, and it may be easily inferred that the confusion as to names has arisen simply through an inadvertent clerical error. Many *Cuscutas* have been introduced from various countries, and these are more numerous than may be generally imagined, more than thirty being enumerated in Steudel's "Nomenclator Botanicus," and this does not include the well-known indigenous Dodder.

It has been stated that Daddies grow only upon herbaceous plants and the smaller shrubs, yet Shakespeare employed the term "doddered" to the Oak, from which it has been assumed that the word formerly was not only applied to parasites generally, but figuratively, in describing trunks of trees clad with vegetation. As expressed by its name, *C. chilensis* is a native of South America, and it so much resembles the Peruvian *Cuscuta*, *C. odorata*, that it is very probable the question as to whether they are not identical has yet to be determined. Those who have had an opportunity of witnessing its wonderful growth and effect when cultivated under favourable conditions in this country may be able to form some idea of the character of this plant when growing in wild luxuriance on some of the most fitting of its foster plants, and readily realise the regard in which it is held by the Spanish Creoles, who have applied to it the popular name of *Cabellos de Angel* (Angel's Hair). Whether this exotic parasite, which appears to have been introduced from Chili in the year 1821, is capable of being acclimatised is uncertain, but should it prove to be so it would be difficult to imagine a more undesirable plant to introduce amongst some of our field crops. It certainly is sufficiently hardy to withstand 3° or 4° of frost, but flowering as it does rather late in summer, when growing in this climate out of doors, there does exist for agriculturists the assurance that it would only, in very exceptional seasons, ripen its seeds; were it otherwise they might fairly be appalled.

When observed in a small state, growing on some suitable soft-wooded plant to which it has been allowed to attach itself for preserving it through the winter months under glass, there is nothing particularly striking in its appearance, and under such a condition there is relatively nothing to suggest the extraordinary spectacle it will present when its growth is fully developed. It is only necessary to have an established piece, even though it be growing on such a plant as would ordinarily occupy a 5-inch flower pot, and so soon as the late spring frosts are over to remove it to a suitable place, to demonstrate its amazing characteristics.

Supposing it to have been placed close to a dwarf Ivy-clad wall, sheltered and shaded by deciduous and evergreen trees of a large growth, here and there a Lilac, a Flowering Currant, or Box tree, and then large Elders, the latter perchance draped with that always picturesque British climber, Traveller's Joy (*Clematis Vitalba*), in such a place as this the Chilean *Cuscuta* would soon manifest its prodigious growth. Attaching itself to the nearest plant, herbaceous or otherwise, its unde stems presently embrace those of others within reach one after the other, in snake-like coils, sometimes singly, but not unfrequently in twos and threes, and in its progress completely fixing itself by penetrating their epidermis with its root-like tubercles. The more it becomes established the more vigorously it grows, sending out strong thong-like lateral shoots, in some cases several feet in length, and these soon take possession of the branches of surrounding shrubs and trees for a distance as much as 15 feet from the spot where it was originally placed.

At the same time a portion of the parasite will be luxuriating amongst the Ivy, elevating itself above the branches in the most fantastic fashion, some of the more thread-like stems coiling themselves round the larger ones, and together eventually forming an inextricable densely matted mass of as curious an example of vegetation as it is possible to conceive. It is, perhaps, on Ivy that it best displays itself, so incredibly luxuriant does it become as to almost conceal it, and it is from a spray of this plant that the accompanying illustration (fig. 11) has been produced. As has been stated, it does not commence flowering until somewhat late in the summer, but then its delicate diaphanous flowers are produced in clusters over the whole of the plant in the greatest abundance. These are clear white faintly spotted with a purplish hue, and emit a fragrance suggestive of both Hoya and Heliotrope.

The rather uncommon species of *Cuscuta* deservedly claims attention as worthy of cultivation, not only on account of its being so free flowering, but as well of the fact that there are very few flowers that can vie with it for retaining a fresh appearance when cut and placed in water, more especially if a portion of its foster plant be cut with it, in which case it will remain a pretty object for as much as three or four weeks. In combination with other flowers for table decorations it can be made to present quite a unique appearance, and for this purpose its value cannot be over-estimated.—S. S.

THE WANDERINGS OF MR. PETER BARR, V.M.H.

A FEW weeks ago (page 494, December 7th, 1899), in connection with the subject of Irises, we made reference to a letter from Mr. Peter Barr, in which, among other things, he described a visit to the Iris fields in Japan. The letter was alluded to as a remarkable one, as penned by a writer seventy-four years of age, because it contained 3000 words on three sheets of note paper. That was a slight error. Four sheets were used, and they contain over 6000 words; size of sheets 8½ by 5½ inches. We know of writers who could inscribe with admirable clearness more matter into the same space, but they are not septuagenarians, nor could they describe similar experience. The narration is not limited to gardening by a very long way, but is little,



FIG. 11.—CUSCUTA CHILENSIS.

if any, the less interesting on that account. It is just a free and easy description of scenes and situations, also men and women that were met with by a close observer with a good memory, and who can record without much trouble his impressions, while not being altogether lacking in the critical faculty. Though not written for the purpose of publication, we have no hesitation in inserting a considerable portion, as a change from ordinary literary fare, and commence with one of the sheets of the chatty communication.

ON THE WAY AND IN THE U.S.A.

I fear you will think me a strange fellow after all your kindness and your very friendly letter of April 4th, 1898, not to have written to you sooner. Should you ever leave off editing a paper and take to travelling and give yourself up to pleasure and relaxation you will find out how difficult it is to find time to do correspondence, especially if your feet be directed to the United States; and as far as my wanderings have yet led me, the U.S.A. is the one country for a man to travel in who desires to study men, manners, and the development of the human race.

Before leaving England (the British Isles) I thought it best after

saying adieu to my Scottish friends to visit Ireland and see how matters stood, in case I should meet an Irishman at the corner of every street in every town in the U.S.A. holding forth on the grievances of "Ould Ireland," so that I should from personal knowledge be able to say, "Pat, shut up, if your love for Ireland is as great as your hatred of the Saxon; the Irish farmer is in a better position at present than the same class in England and Scotland." I am glad to say I met none in my travels who had an evil word to say about England; but I actually met with parties who regretted that the U.S.A. and Great Britain were not one and the same country. The feeling was universally favourable to a close alliance of the States and Britain.

I sent you from time to time newspapers, showing you what an active class of men the American interviewer presents to the world; these papers were intended as an apology for a letter. To show you how my correspondence stood when I reached Japan, I was somewhere about 100 letters in arrears, and if you wonder what 100 long letters mean, take this one as a sample. I arranged the letters in alphabetical order, and am getting to the end of the list, but as each mail brought some new correspondence to be attended to a portion of my time in Japan has been taken up letter writing.

Now for my tour. I reached Boston, Mass., U.S.A., April 18th, after seeing the big storm in mid-ocean, when the water was tumbling about in great masses as large as the twenty-storied houses of the States. I did not see the typical storm represented on canvas and described in books of the great crested waves rolling one after the other and the good ship "Seythia" climbing the one roller with the bow high out of the water and descending the other side with the stern up in the air and then into the trough of the sea, getting ready for the next mount, but we sailed in the midst of three great lumps of water; any one of them falling on the deck would have given us a watery grave.

Arriving at Boston Harbour, the first demand made was, How much money have you? The next was 2 dollars for a short ride in a cab to my hotel. My face washed and clothes put in visiting order, I made my first call on a dry goods man, who sent one of his young men to show me the lions of Boston. The first was the Monument on a "humplock" of soil, whence the men of the Revolution had repulsed the British forces. After that I was able to see more quietly the philanthropy that permeates the monied men of Boston. Hospitals all about, and little hospitals sufficiently numerous to take in accident patients, attend to immediate wants, and then convey to a larger hospital.

The next day was Patriot Day, when there is a great gathering to commemorate the triumph of the Revolution. The day was threatening, so I turned my attention to nurseries, and managed to do two, but was not impressed by either; then I called on a Rose grower in a private place, and found some excellent work in the production of Roses. After this I saw some other sights and then settled down to make a study of the schools and find out through them the success of the U.S.A.

Their educational system is older than ours, but developments of an important nature commenced about the time we established Board Schools, and they have kept well ahead of Europe. One advantage the schools have, they are not hampered by sectarian or any other influences of a partisan character such as seem to prevail in the older countries of the world. I spent a good part of three weeks amongst the schools from the lowest down where the strangers from Russia, Poland, and Hungary are at once taken hold of and taught English and thus turned into citizens, up to the training schools for teachers. The work throughout is splendid. One thing strikes a stranger — the almost total absence of those who twang their nasal language in your ear. Much of this you hear in London Yankees is put on. The schoolmaster is destroying this as he is putting the h's in their right place in England and clearing away the sweet drawl of Edinburgh and the rough tone of Glasgow.

Having finished my work in Boston I worked down towards New York, taking the towns on my way and looking up friends, and the man near Middleton who had invested his money in catching gold from the sea. The thing came about in this way. A preacher conceived the idea that to tax people to listen to him was not gospel, so he trusted to faith and his congregation, and the congregation not averse, let the preacher live in faith, and as this did not fill his stomach nor cover his back, he bethought how he could raise the wind, and attending a lecture on one occasion the lecturer said there was gold floating in the sea; then came the question how to catch this much-needed article. He thought out a plan, put it in motion by securing a foreshore, letting the sea water in and then closing it up, so that in the return passage it had to pass through his machine, with the result he caught gold and silver. Then he approached a well-to-do Scandinavian nurseryman who advanced 2000 dols., and the work went on merrily; more money was advanced, till like other benenolent speculators he thought the public should share the loss and gain, if any. I think the London papers told the rest of the story in 1898.

I reached New York, found Mr. Leonard Barron and Mr. Withers on American "Gardening"; both showed me great kindness. I met other friends, and then went off to Rathmore. Here my good luck continued with me, and an English gardener took me about, and in their great park is a fine monument to Sir William Wallace, raised by a patriotic

Scotchman. My next town was Washington, D.C., here I spent most of my time in the State agricultural department, giving and receiving information. A mighty work is going on in this department, the head of it, Secretary Wilson, is a Scotchman. There are professors to look into and study diseases of plants and injurious insects, collecting together every kind of produce imported into the States to see if the same cannot be grown in one or other of the States of the Union. I entered every branch to see what was being done for the good of the country. If you do not get the annual report you should apply for it. Every citizen of the U.S.A. is entitled to a copy if they want it, but they give freely to anyone out of the States, and I should not be surprised if one is at King Street for me, if so you can have the loan of it.

As a country Great Britain is in the tail end of all countries educationally, even Japan. We leave all to private enterprise, and only in the building of big battle ships does the Government take the initiative. It is a great pity that a million or two otherwise spent were not devoted to bringing us in line with the work done for the tillers of the soil in the U.S.A.

I then went to Pittsburg to see Mr. Falconer, superintendent of Sepley Park, and formerly on the horticultural press of London, spent some days with him, and visited Andrew Carnegie's steel works, then the Quaker city (Philadelphia), but saw none I could recognise as Quakers; the Penn hat, the stand-up collar, and the draped coat had all gone. Here I found a lot of good growers, Mr. Drew's nursery is a big concern, and a great work goes on amongst out-of-door Water Lilies and Victoria regia Tuckeri. Returning to New York Mr. Hicks Arnold considered my not seeing the Yellowstone Park would be a mistake, so off I started direct, a long railway journey, running day and night on a quick train. No one can form any idea of a railway journey till he gets a taste of it in crossing the American continent. From the time of leaving the train to the time I was again back to New York was about eighteen days.

Next follows a description of the Park and a drive with one of the wives of a Mormon Bishop.

JUDGING MELONS.

In referring to the remarks of Mr. Temple, on page 565, respecting the judging of Melons, I feel assured that to abolish the practice of cutting the fruits when in competition to ascertain their chief merit — viz, flavour, would not only cause dissatisfaction among the judges, but would also be a great injustice to exhibitors. It is practically impossible for any judge to arrive at a correct decision as regards the quality of a Melon without tasting it. There are numbers of fruits staged at horticultural exhibitions from time to time which, so far as appearance goes, are *par excellence*, being perfect in shape, beautifully netted, and highly coloured, but deficient in flavour. It cannot be denied that the aroma is a fair criterion as to flavour, but even this sometimes is not reliable.

I am inclined to think that the Fruit Committee of the R.H.S. would not favour the abolition of cutting Melons when submitted for their approval, as flavour and depth of flesh are the chief points. These gentlemen knowing what constitutes a good Melon regard size, shape, netting, and colour, which go to make up the external quite of secondary importance, and only first-class varieties find favour and meet with recognition. We all believe, do we not, in the old saying that the proof of the pudding is in the eating? and it is equally applicable to the Melon.—J. BARKHAM, Longford House, Haven Street, I.W.

I KNEW well what I was writing about when making a few remarks on, what has been so often discussed, the judging of Melons by the "non-cutting" system, I therefore did not unconsciously emphasise the need of cutting the fruit to ascertain its condition. I never could at any time tell what the flavour of a Melon was from any external signs. Neither, scent, colour, form, nor the absence of these points gives indications as to the quality of the fruit. "K." (page 8) may rest assured that I am not at variance with him as to cutting the fruit. There are other points to be considered besides flavour; mere sweetness is not the most tangible proof of a first-rate Melon. I have seen Melons have the highest awards on exhibition tables which were totally unfit to hold a position in a well appointed dessert. Fruits tough like leather, with flesh of no depth, which required masticating like an Apple, are not among the qualities of a first-rate Melon. No connoisseur would tolerate such on his table.

It is the same with most other fruits. Those who have been accustomed to have the wants of their palate gratified with the finest qualities which can be produced in fruits, are not easily satisfied with what I have hinted at as being too much in evidence on exhibition tables. Young beginners should make themselves acquainted with the points which are essential to render the fruit of first-rate merit before they begin judging by flavour. If horticultural societies insert in their schedule rules (as numbers are doing), there is no help in the matter of making mistakes as to flavour, and judges will be relieved of a part of their duties, which are not always agreeable. During a lifetime (each season) engaged at such work one learns a thing or two.—M. TEMPLE, Carron, N.B.

HORTICULTURAL EXAMINATIONS.

UNLESS I am much mistaken, it will be readily conceded that examinations in horticulture have a sufficient bearing upon the future of gardening in this country to justify an occasional halt being made to consider whether their trend is beneficial or otherwise; and, whatever may be their influence, whether they are not capable of improvement. The present time appears opportune for a discussion of the several questions to which horticultural examinations, as at present conducted, give rise. The scheme inaugurated by the Royal Horticultural Society for the purpose of testing the knowledge of the rising generation of horticulturists has been in operation a sufficient length of time to enable us to form a fairly correct idea of the results that have been obtained, and to formulate an opinion upon them.

In opening the discussion on the questions that present themselves for consideration, I would first state that I have long had, and continue to have, a decided leaning towards examinations; and also that I fully appreciate the public spirit shown by the Council of the Royal Horticultural Society in formulating the scheme that now occupies a prominent position in the Society's programme. Therefore it is with no deep-seated objection to examinations, or in an unfriendly spirit, that I approach the question. On the contrary, it is with a strong desire to assist in devising some means by which the examinations could be so conducted as to bring about the results we all so earnestly desire.

The two questions of special importance in this discussion appear to me to be: Are horticultural examinations serving a useful purpose? If not, can they be so improved as to make them useful? A direct yes or no to either question would not meet the necessities of the case. They ought to be fully considered from the several points of view, and the answers so formulated as to indicate the course that should be taken to insure satisfactory results. There is no doubt whatever in my mind that those examinations might be made to render valuable service in testing the knowledge of those individuals who submit themselves to them. I am equally well satisfied that if they fail to do this it is because of some defect, trifling it may be, in the scheme under which they are held.

In turning our attention to the Royal Horticultural Society's system we may with advantage endeavour to ascertain the object the Council had in view in its formulation. Unless I am under a misapprehension the object was the provision of a means by which the education of young gardeners might be encouraged, the knowledge of those attending courses of lectures on technical horticulture be tested, and the ability of those who had adopted gardening as a means of livelihood demonstrated.

If these were the objects of the scheme we shall be fully justified in stating that it has succeeded in effecting the first of the three. There can be no doubt whatever that the examination has given a great stimulus to the education of young gardeners in matters having a direct bearing upon the work of the garden. They may not have taken advantage of the facilities for the acquisition of knowledge in exactly the right way; but to stimulate a desire for a fuller acquaintance with the gardening art than can be obtained from rule of thumb practice is a distinct gain, and this much I gladly place to the credit of the scheme.

If the second of the objects was as I have stated, it must be said that in this particular the scheme has unquestionably failed. It was to me a foregone conclusion that the examination must fail, and I based my estimate on the fact that an examination ranging over the whole domain of horticulture could not satisfactorily test the soundness of the teaching given at a course of lectures on one branch of it. It is surprising the examinations should have been projected for that purpose, and still more surprising that the local educational authorities should have considered that they could effect such an object. It was a matter of common knowledge that the lectures were being given in courses of three, four, five, or six, and that each course was devoted to some special branch of gardening, as fruit culture, plant culture, and kitchen gardening. What was being taught was certainly well known to the committees who had passed the syllabus of the several courses, and they ought to have known that a general examination could not properly show the extent of the information obtained by a candidate in attending five or six lectures on one section of gardening.

Let us for a moment assume that students attending a course of lectures on vegetable culture sat for the examination held in 1899, and then turn to the examination paper. We shall find that there are two questions only relating to the kitchen garden, one referring to Peas and Beans, and the other to salads. Those who had attended a course of lectures on fruit culture would be in a still worse plight, for the only question is one relating to the culture of fruit under glass. The thoroughness or otherwise of the teaching of any particular branch of horticulture can only be properly tested by an examination based on the syllabus. Had examinations been conducted on these lines within two or three weeks after the concluding lecture, it would have been readily seen whether the students had profited from the lectures they had attended. Had this been done, and students who had passed two or three of the special examinations sat at the general examination held at the close of the lecture season, their knowledge would have been put to a satisfactory test.—(First portion of a paper read by Mr. GEO. GORDON, V.M.H., at a meeting of the Horticultural Club on the 9th inst.)

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, Jan. 9th.—Present: Dr. M. T. Masters (in the chair); Dr. H. Müller; Mr. Michael, Mr. E. im Thurn, C.M.G., and Rev. G. Henslow, Hon. Sec.

Horseradish Attacked by Rhizogryphus.—Some roots of this, as also of the Lily of the Valley, attacked by this mite, were received from Mr. Abbey of Avery Hill, Eltham, who forwarded a long list of plants likewise attacked. Mr. Michael observed that it is a subterranean species, and that although it prefers bulbs, it is very injurious to many, indeed, most other plants with fleshy roots, though it may not thrive equally well upon them. As a remedy Dr. Müller suggested lime and sugar or treacle, as being better and stronger than limewater, as well as more persistent in its action. Mr. Michael also observed that heat, as in boiling water, was destructive, but the mite resisted chemicals to a remarkable degree. With regard to the life history, it passes through several stages, commencing with the egg, this gives rise to a hexapod larva, then to the nymph, a very active octopod. After a new change of skin, in a large number of cases, but not in all, there emerges—without any discoverable cause—a being totally unlike the preceding, formerly known as Hypopus, having been thought to be a quite different genus. This has a soft body internally, but covered with a hard and usually chitinous integument. Its mouth organs are rudimentary, and it probably does not feed. It is provided with discs by means of which it adheres to insects such as ants, bees, beetles, &c., and to other small moving creatures. These it utilises as means of migration, clinging to them, but without being parasitic. As soon as a suitable environment is met with, the mite changes back into the last nymphal stage, and then proceeds to pass into the adult male or female condition. It may attack plants in all stages, except that of the migratory Hypopus. The Hypopus is practically impervious to chemicals, and can endure without injury exposure to heat and draught which would destroy the creature in any other stage.

Apples Injured by Hail.—Some fruit was received from Mr. Woodward of Barham Court, Maidstone, which had received severe injuries from hailstones. But, although the skin was cut through and the flesh exposed, this had dried up and so protected the interior, which had not at all decayed. The storm occurred on July 19th, 1899. Mr. Michael observed that when birds plunged their beaks into Apples through thirst, the injured spots usually resulted in decay.

FRENCH HORTICULTURAL SOCIETY.

THE members of this flourishing young Society, which has done so much under the generous policy of its Chairman, Mr. G. Schneider, to improve and strengthen the good relations existing between English and continental nurserymen and lovers of horticulture generally, held their eleventh annual dinner on Saturday last, at the Imperial Restaurant, Strand. M. Geoffray, the Minister for France in this country, occupied the chair, being well supported by numerous French and English friends of the Society, among whom we noticed M. Léon Clerc, Secretary of the French Chamber of Commerce in London, Mr. George Schneider, Mr. George Gordon, Mr. Harman Payne, Mr. Thos. Bevan, Chairman of the Floral Committee N.C.S., and others.

The Chairman proposed the health of Her Majesty the Queen, and this was followed by the toast of the President of the French Republic, by Mr. Harman Payne.

The next toast on the list was that of the Chairman, by Mr. Tucker, and in reply M. Geoffray expressed his pleasure at the useful work the Society was doing, and complimented the officials on the energy they had displayed in helping to promote good feeling between the horticulturists of the two countries, and he would couple Mr. Schneider's name with the toast. Mr. Geo. Schneider, in reply, thanked the Chairman for the honour he had done the Society by presiding at their gathering, and asked permission to give a few details of the progress made during the past year. He was pleased to say that the list of membership had largely increased. During 1899 they had elected eight perpetual honorary members, forty ordinary honorary members, fifty titular members, and thirteen corresponding members, or 111 in all. Instead of printing 500 copies of their annual bulletin it had been found necessary to print 600. From a financial point of view the progress was equally satisfactory. They had now a substantial sum invested in stock, which was productive of an annual income. The library had also been increased, and they were largely indebted to English nursery and other friends for help in various ways. Some of these were present, but he regretted that others who would have been there were kept away by illness, notably Messrs. G. Nicholson of Kew, Mr. Arnold Moss, and Mr. Drost. He would ask them all to drink to the health of their guests.

An opportunity was taken of presenting to Mr. Schneider a testimonial consisting of a pair of handsome porcelain vases from the young members of the Society in appreciation of his labours in their behalf.

Mr. Harman Payne responded for the guests, and proposed the toast of the absent members. Towards the close of the evening the company sang "La Marseillaise" and "God Save the Queen," following which a collection was made for the widows and orphans of the British troops now fighting in South Africa.

BIRMINGHAM BOTANICAL GARDENS.

THE visitor may always be sure of finding something in flower here, and this Christmastide there was a beautiful show of Begonia Gloire de Lorraine. The veteran Curator, Mr. W. B. Latham, quickly secured a stock of this plant when it was placed on the market. Considering the comparative dearth of flowers at this season of the year, this floriferous Begonia has made for itself a niche that no other plant could fill. The fine array of specimens in question was arranged in the aquatic house, a portion standing upon inverted flower pots and the other suspended from the roof, the former being supplemented by choice Ferns and other ornamental foliage plants. The whole was enhanced by two large specimens of the too little grown *Callicarpa purpurea*, the violet purple innumerable-berried racemes of which afforded a charming contrast to the rosy pink inflorescence of the Begonia.

A peep into the principal Orchid house revealed—considering the time of year—a fair display of bloom, composed chiefly of *Lycaste lanipes*, *Laelias anceps* and *autumnalis*, *Calanthe Veitchi* in quantity, and *Ceologyne barbata*, *Cochlioda rosea*, *Odontoglossum crispum*, *Saccolabium giganteum*, several forms of *Cypripediums*, such as the new and distinct hybrid *Deedmanianum*, a fine plant of *Stenei* with five or six spikes, *Lathamii*, *Chamberlainianum*, *nitens*, *cardinale*, *Sallieri*, *villosum*, and *Sedeni*. It may be remarked that the *Cypripedia* form a considerable feature in the large collection of Orchids here. There is a large number of unflowered seedlings, and of which Mr. Latham and his expert lieutenant, Mr. W. Deedman, are justified in expecting something good, according to their parentage, and the appearance of the remarkably fine foliage of several of the plants.—W. G.

THE YOUNG GARDENERS' DOMAIN.

MALMAISON CARNATIONS.

MALMAISON Carnations are amongst the most useful plants in cultivation, especially during the winter months. To propagate, the old plants should be layered in frames the first week in July. The compost to use for this operation may consist of equal parts of fine loam, leaf mould, and sand, well incorporated. Have the old plants which are to be layered well cleaned, and see that the ball of the plant is thoroughly moistened before taking it out of the pot, otherwise it will give great trouble. Place the ball well under the soil, so as to give plenty of room for layering on the top of it.

Layering is a simple operation, but layers are frequently spoilt either by cutting too deeply or not deeply enough. Each layer should have all the bottom leaves trimmed, and then be cut from one joint to the other, so that when it is made it will be a little more than half way through the stem; then with a peg, either made out of twigs or wire, fasten in the soil, always having the cut piece pointing downwards in the soil. As the layering proceeds give water to settle the soil around them, and keep the lights close. If the weather should be hot they will also require shading. Syringe them every afternoon on bright days when the sun has gone off the frame.

In from eight to ten days a little air may be admitted to encourage sturdy growth, and gradually give more as time goes on, until they will stand with the total removal of the lights. In from four to five weeks the layers will have rooted and be ready for potting. The size for this should be 3½-inch, which has been well cleansed and drained, using a compost of three parts of loam and one each of leaf mould, sand, and fine peat, with a little wood ashes. Pot the plants firmly so as to encourage sturdy growths; place in a cold frame, standing the pots on coal ashes, and keep them close for a few days until root action commences; also shade lightly from the sun on bright days. The watering now will have to be carefully done, never applying any unless necessary.

When the plants have a fair amount of roots around the sides of the pots they will require another shift, and 7-inch pots are very suitable. They will require a thorough washing, and also plenty of drainage. The compost should consist of ten parts of loam broken up in pieces the size of large Walnuts, two parts of peat, two parts of sand, two parts of wood ashes, one part of old mortar rubble, a little sheep's manure, charcoal, and a good sprinkling of Clay's fertiliser, well incorporated. Handle the plants very carefully, so as not to break any of the young roots, pot them firmly, and have the tops of the balls rounding, so that in watering none will settle round the stems of the plants. When potted stake each one, but do not tie them too tightly, and afford a temperature of 45° to 50° at night, 50° to 53° by day, and keep the house close for a short time. Do not apply any water for a few days after potting.

Malmaisons are lovers of plenty of air. Attend to the tying of the plants as necessary, also removing decayed foliage as it appears, for if permitted to remain any length of time it will cause other parts to become disfigured. The plants will require very little manure until the following spring, but weak liquid manure occasionally will do them no harm when the roots have found the sides of the pots. When the plants are showing their buds and are large enough to handle remove all side buds, leaving only the crown. As the days begin to lengthen and the sun gains power, the plants will require shading during the hottest parts of the day, and also the house will

need damping occasionally. It is good practice when very hot to syringe between the pots two or three times daily. Any time on perceiving green or black fly on the plants a little tobacco powder should be dusted on the affected parts, and also fumigate occasionally with XL All vaporiser, which will quickly destroy the pests.—P. R.



HARDY FRUIT GARDEN.

Raspberries.—*Preparing Ground.*—In establishing a new quarter of Raspberries the first essential is the preparation of the soil. The best material for the growth of Raspberries is a rich strong loam, but the best material requires to be thoroughly well broken up, so that it may have more capacity for holding food and moisture and admit of the roots ramifying readily. The strong-holding roots descend deeply, imparting strength and stability; the fibrous roots increase and multiply near the surface. Rich, deep soil is needed for both sets of roots, hence in the preparation of soil prior to planting trenching is the best method of procedure, not, however, bringing poor subsoil to the surface. This can easily be avoided by bastard trenching. Work in a liberal quantity of rich farmyard manure, especially in the lower spit of soil, as this is the only opportunity that particular portion can be manured, though nutriment from surface dressings will be washed down in course of time. Soil of a stiff character may be improved by the addition of old potting soil or gritty material, this being chiefly inter-mixed with the surface soil.

Planting.—Strong young canes which have been produced from the old stools are not so good for planting as vigorous, but medium-sized, canes, which have emanated from suckers at a distance away. The latter will be better furnished with the most desirable set of roots—namely, fibrous roots, and a tap root of a less woody character than is to be found in divisions of old stools. If these sucker growths can be lifted, the injured roots pruned, and be at once planted, they will soon take hold of the soil. Spread out the roots to their full extent in shallow, wide holes, raised in the centre, on which place the plant. Cover with some light, rich, prepared soil mixed with burnt refuse, spreading this lightly over them from the crown outwards, finishing with some of the finest of the staple soil. There are various methods of planting, some preferring lines or rows, others planting in clumps of three with a stake not more than 5 feet high in the centre. Place the plants a foot apart in a triangle. If in rows, plant a foot apart in rows 5 feet asunder. Wire for training the growths upon must be stretched between stout uprights of wood or iron.

All newly planted Raspberries will require pruning closely before growth starts. The weakest canes must be pruned close to the ground; stronger, having abundance of roots, within a foot of the soil. No fruit should be permitted the first season, as it is most desirable that the growth made be encouraged to develop in a vigorous manner for the production of fruit the following season.

Pruning Established Raspberries.—The winter pruning consists in reducing the number of canes to each stool, not allowing more than six to each, and these should be the strongest. Weakly canes, also the dead canes which have borne fruit, must be cut out entirely. Shorten the canes retained to the height of the stakes or trellis. When trained to stakes tie the canes round the central support. On wire spread them out at equal distances.

Manuring.—Newly planted Raspberries may be mulched lightly with littery manure. Established plantations should receive a liberal dressing of rich decomposed manure spread between the rows and round the stools, not digging or forking it in, but leaving it to decay.

Root-Pruning.—Though autumn is the best period for carrying out this work it may be done any time before growth commences, operating on trees that make too much wood growth and produce little or no fruit. A trench should be cut round at a distance of 3 feet from the stem, but it will be safer to do so only half-way in one season, dealing with the other half the following year. In cutting the trench all strong roots found are severed, ultimately cutting the jagged and broken ends smoothly. Preserve all fibrous roots for laying in again. The chief cause of strong unfruitful growth is the descent of the tap root and possibly other large roots into the subsoil. These must be checked by severing them smoothly. All the roots on one side having been dealt with proceed to fill in the trench again, mixing in with the soil wood ashes, decomposed manure, and a little turfy loam, making the whole firm, and spreading the fibres preserved horizontally. Mulch with some light manure.

Wall Trees.—*Pruning.*—Apples, Pears, Plums, and Cherries on walls not yet pruned should be attended to. Horizontally trained, fan trained, and cordon trees ought not to have the main branches closer together than a foot. Old trees having large branches and clumps of spurs must have more room, as it is desirable to afford light and air

freely to every part in summer. Therefore thin out the spurs, partially shortening the most elongated. Foreright or side shoots, whether summer pruned or not, may be shortened to a few buds with a view to these forming fruit buds. These are more likely to develop quickly if the shoots which extended long were shortened to six leaves in summer in the case of trees which bear fruit on spurs. By doing this the basal buds on each shoot are largely encouraged to form fruit buds.

Cleansing.—Trees are all the better for a dressing of some kind, especially if they have been affected with red spider on the leaves last season. These insects pass the winter on and in the crevices of the bark. The caustic soda and potash solution sprayed on the trees destroys insects and eggs, leaving the wood clean and bright. An insecticide for applying with a brush is composed of half a pound of softsoap in a gallon of water, 1 pint of tobacco juice, and a handful of flowers of sulphur, all thoroughly intermixed.

FRUIT FORCING.

Cherry House.—Give due attention to watering trees in pots and syringing on fine days, damping occasionally only when the weather is dull. Maintain the night temperature at 40°, 45° to 50° in the daytime by artificial means, ventilating at 50°, and allowing a rise of 10° to 15° from sun heat, with full ventilation, closing at 50°. Scrutinise the trees closely for aphides, and if there be any trace of the pest take measures at once to eradicate them.

Cucumbers.—Maintain the night temperature at 65°, allowing 5° more in mild weather, whilst it may be 5° less on cold nights, 70° to 75° by day, and 80° to 85° from sun heat. When the external air is mild a little ventilation may be given at 80°, closing before the temperature is reduced below that degree, so as to raise to 90° or 95°; but if the external air is cold, though the sun shines, it is better to allow the temperature to advance a little beyond the above limits than to admit cold air, which injures the foliage, also causing the fruit to become stunted and curl at the end. Plants in bearing will require to be examined about twice a week, removing all weakly, superfluous, and exhausted growths, reserving as much of the young bearing wood as is necessary to fill the allotted space, stopping the shoots above or two joints beyond the show for fruit.

Young plants coming into bearing should not be allowed to bear fruit too soon, and by no means be overcropped. They are greatly assisted by removing staminate blossoms, also superfluous pistillate flowers as they appear. Tendrils also should be pinched off. The supply of moisture, both at the roots and in the atmosphere, must be regulated by circumstances and external conditions. Syringing should not be practised on the foliage, except a light sprinkling in the early part of bright afternoons, damping the floor at about 8 A.M. and 2 P.M. Encourage the roots to spread on the surface of the bed by adding lumpy loam from time to time, with which may be incorporated a little well-decomposed cow manure or fresh sweetened horse droppings. When roots are had in this manner the plants may be fed to any extent by sprinkling a mixture of two parts bone superphosphate and one part powdered saltpetre, mixed, on the surface, at the rate of 2 or 3 ozs. per square yard every fortnight or three weeks, with a light dusting of soot between times.

Keep a keen eye on the plants for aphides, and fumigate several times moderately and consecutively rather than once severely. The evening is the best time for fumigating, following it up by another dose the following morning. If mildew appear, paint the hot-water pipes with a cream formed of flowers of sulphur and skim milk. The fumes given off will kill white fly and mildew, also red spider. Canker is unusually prevalent; freshly slaked lime rubbed into the affected parts will arrest its progress.

Peaches and Nectarines.—*Early Forced Trees.*—Fertilise the blossoms as the pollen becomes ripe, using a camel's hair brush, feather, or rabbit's tail mounted on a small stick; these are better and more effectual than shaking the trellis. When the fruit is well set syringe the trees occasionally in the morning or early part of the afternoon, to assist the fruit in casting the remains of the flowers. In bright weather syringing may be practised in the morning and afternoon; but when dull have recourse to it in the morning, this and damping in the afternoon being sufficient. The water employed must be of the same temperature as the house, and the inside border should be duly supplied with it. Disbudding will soon require to be attended to, but it must be done with discretion at this early season, it being better to remove a few shoots daily from a tree than many at a time at distant intervals. The night temperature may now be maintained at 55° to 60° on mild nights, 60° to 65° by day, 5° less as the medium when the weather is severe and dull, admitting a little air at 65°, not allowing an advance over 70° without full ventilation, always excepting a little left at the top of the house constantly.

Second Early Forced Trees.—When the blossoms show colour on the trees started at the new year syringing must cease, but the paths and borders should be damped in the morning and afternoon. Supply water as required to keep the border in a thoroughly moist state. Keep a sharp look out for aphides. If there be any fumigate the house on two or three consecutive evenings moderately, which will be sufficient to keep the pests under until the fruit is set. In case of an excess of blossom buds, and they are abundant this season, also promising,

draw the hand the contrary way of the growths along the under side or back of the trellis, so as to remove the number of bloom buds, which will increase the vigour of those left, therewith tending to a more even and better swelling of the fruit after setting.

Succession Houses.—Push forward the pruning of the trees, cleansing of the house, dressing the trees with an insecticide, and re-adjusting them to the trellis, leaving plenty of room in the ligatures for the swelling of the branches. The surface of the border may be pointed over with a fork, but not disturbing the roots, the loose soil removed, and fresh loam supplied, sprinkling on it about 4 ozs. per square yard of a mixture of steamed bonemeal three parts, sulphate of potash two parts, and sulphate of magnesia one part, mixed. If the borders are at all dry they should be given a thorough watering. Houses, however, that have movable roof-lights, and these being off, will not require any water, the soil being thoroughly moist from rain.

THE BEE-KEEPER.

CONFINING BEES IN WINTER.

A COMMON error often made by bee-keepers in their anxiety to prevent the bees suffering from the extreme cold is to confine them to the hives by closing the entrance. This ought only to be done when the colony has to be removed some distance by road or rail. Ample ventilation should then be provided by using a piece of perforated zinc to prevent the bees leaving. Our attention has lately been drawn to a case in point. The entrance to a frame hive had been accidentally closed, how long we were unable to discover; but from the condition of the bees they had probably been confined for at least a month, and there was not a living bee in the hive.

What is the cause of bees dying in this manner when the entrance is closed for a few weeks at midwinter? We cannot say they were suffocated, as it was impossible to close the entrance quite closely, although there was not sufficient space for a bee to pass through. The small space unclosed was the fatal error. The first fine day after the bees were made prisoners, when the sun was shining directly on the entrance, they would do their utmost to leave their hive. Being foiled in the attempt, they gradually became numbed owing to the low temperature that prevailed, and so were unable to return to the cluster. This alone shows what a dangerous practice it is to close the entrance at any time.

MAKING CANDY.

We are reminded there are constantly new readers, and as we have recently advised some of them to feed their bees that are short of stores at this season with candy, it may be of some assistance to them if we state, as briefly as possible, how to make it. Candy is not always made properly at the first attempt, but, like many other things, practice makes perfect, and with a little patience a novice may soon prove how easily a fine-grained, moist, soft candy is made. If it is coarse-grained the bees will not be able to consume it, and during the prevalence of fine weather they may be seen carrying it from their hive. We have had experience of this, as we were not successful in our initial efforts.

We prefer a paraffin or gas stove, as they are clean, and the heat can be regulated, which cannot be done so readily over an open fire. Use a fine granulated sugar, a brass or enamelled iron preserving pan should be used, into which put 12 lbs. of sugar, two imperial pints of water, and two teaspoonfuls of cream of tartar. Set on the stove, stirring constantly to prevent burning, until it comes to the boil. Turn the burners slightly down to prevent boiling over until the mass begins to settle down to boil, which is readily known by its frothiness. Continue stirring, and have ready a cup of cold water for testing it, and with a teaspoon lift out a little syrup and drop it into the water. If it lie at the bottom of the cup so as to lift like very thick paste or putty it is just right, and ready to be removed from the fire. If too much boiled the syrup will be hard and crisp in the water. This may be remedied by adding a little water to the syrup after its removal from the fire.

Much will depend on the class of sugar used as to the length of time required in boiling. If the most suitable for the purpose is obtained two minutes will suffice, whereas another class of sugar similar in appearance will take ten minutes. The pan should then be placed in cold water to hasten the cooling process. Whilst this taking place prepare some shallow dishes, and into these place sheets of thin paper, slightly larger than the dish. When all is in readiness return to the pan of cooling liquor, which should now be kept constantly stirred. At first it will be dark in colour, but as it cools it will have a greasy appearance, gradually getting whiter and stiffer. It should then be poured into the shallow dishes and allowed to cool. The candy may be removed from the dishes as soon as cold, and will then be ready for use.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. Backhouse & Co., Ltd., York.—*Seeds.*

Barr & Son, 12, King Street, Covent Garden.—*Seeds.*

G. Bunyard & Co., Maidstone.—*Seeds.*

A. Dickson & Sons, 55, Royal Avenue, Belfast.—*See s.*

W. Fromow & Sons, Chiswick.—*Seeds.*

W. J. Godfrey, Exmouth.—*Chrysanthemums.*

Harrison & Sons, Leicester.—*Wholesale Seed Catalogue.*

F. C. Heinemann, Erfurt.—*Seeds.*

A. Perry, Winchmore Hill.—*Hardy Border and Rock Plants.*

R. Pringle, Belvoir Street, Leicester.—*Seeds.*



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Begonia weltoniensis (*Amateur*).—This is a useful plant for conservatory decoration, as well as two or three other kinds of a similar nature. The earliest plants may be shortened back and placed in a temperature of 50° until they show signs of growth, when the old soil should be shaken from their roots and the plants repotted in a fresh compost. The plants can be placed in the same size pots or smaller. If the latter they will soon need repotting. They will be found to succeed well in three parts of loam to one of leaf mould, with a liberal quantity of sand according to the texture of the loam, and one-seventh of old Mushroom-bed refuse. Water with care until the plants are growing freely. They will start well in a vinery if no better position can be found for them.

Erica candidissima (*P. H.*).—Market plants of this variety that flower well cannot readily be had in the same condition the following season. If cut back, allowed to start into growth, then repotted and given an extra season, removing any flowers that appear, they make splendid plants. The same may be said of *E. hyemalis* that are cut back late. They often only make short growth, which flowers profusely if allowed to do so, and, strange to say, these plants have much better coloured flowers than those grown for market. If the flowers are removed and the plants allowed to extend their shoots good stock will be produced with shoots 18 inches to 2 feet in length. Keep these plants perfectly cool, give abundance of air and water carefully, but never allow them to become dry.

Where and How to Keep Loam (*E. T. H.*).—We presume the loam is the ordinary yellow or hazel cut in turves of about 3 inches thickness. The best place for it is an open situation, though usually placed by a hedge, fence, or wall on a dry bottom, that is, water on the surface draining away from it. The turves are best stacked grass side downwards in piles longer than wide; we prefer the stack twice as long as wide, and the height about equal to the width, taken up perpendicular at the sides and ends, and at the top span-roofed like the roof of a house. Thus ridged the stack cannot be deluged by heavy rains, and has a chance from its sides and ends being exposed to the atmosphere to become thoroughly aerated and nitrified, turf stacks gaining in nitrates considerably by such exposure. It will absorb some moisture from the soil and remain in good condition indefinitely, the roots of trees not having access to it.

Solanum capsicastrum (*Tyro*).—As your conveniences are extremely limited, we should not cut back the plants until April, then by the time fresh growths push the weather may be warm enough for their being placed in a very sheltered position outdoors, protecting them from frosts which may occur in May, and cutting winds. More than half the old soil should be removed from the roots after fresh growth starts, repotting firmly in good turfy loam, a sixth part of crumbled manure, and a tenth of wood ashes. The pots may be plunged just over their rims in a sunny border for the summer, standing them on smaller pots in the ground to prevent worms passing to the roots. They must be watered as needed, which will not be half so frequently as if the pots were exposed. Clear soot water is good for Solanums when the pots are filled with roots. Some persons plant them out towards the end of May, lifting carefully, and potting firmly in September, watering well, sprinkling the foliage, and letting the plants stand in the shade for a time for keeping the leaves fresh and inciting quick root action. We have seen fine plants grown in that way, but all persons do not succeed alike.

Forcing Seakale (*Nemo*).—You will find tubs, similar to that shown in fig. 12, extremely useful for the forcing of Seakale. The practical

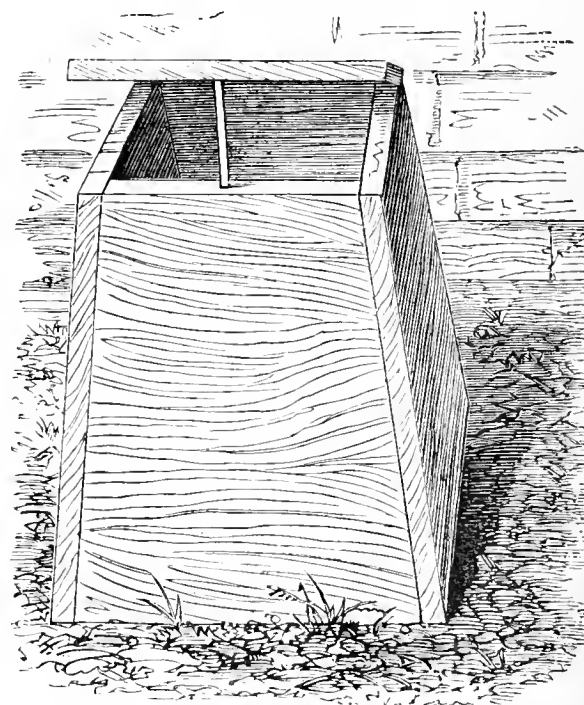


FIG. 12.—TUB FOR SEAKALE.

article by Mr. E. Barrow, on page 52, will probably convey all the information you require. If such is not the case, do not hesitate to write again, as we are always glad to be of assistance to our readers.

Pruning Orchard House Fruit Trees (*V. C. S.*).—The removal of crowded branches, those that cross and interlace with others, small spray growing in the interior of trees, and dead portions of wood are the chief details necessary in keeping trees healthy and fruitful. Though thin disposal of the branches is very essential, severe thinning at one operation is not desirable, should the trees be exceptionally full of rank growth in consequence of previous years' neglect. A reasonable amount may, however, be taken out, each branch removed being cut close at its junction with another, which will prevent young shoots breaking strongly afterwards. Among a host of crowded branches there is invariably an amount of dead shoots. These of course may be cut out. The access of air and light prevents wood dying if trees are otherwise healthy, and a free extension of the branches within moderate limits, so that the foliage can properly perform its functions, favours the production of sturdy fruit buds instead of a preponderance of wood growth. A little regulation yearly, especially in the autumn before the leaves fall, thinning out any obstructing branches then, serves generally to maintain large standard garden and orchard fruit trees in shapely form and prolific bearing.

Potatoes in Pots (*A. N.*).—Extra early, if not very heavy crops of Potatoes can be had from 9-inch or somewhat larger pots, set on shelves at the back and on the beds and front stages of vineries and Peach houses being forced. The earliest short-topped varieties are to be preferred for this method of culture. Fairly strong sets, each furnished with the first strong sprouts only, are desirable, these having been previously started in moist heat. Old Chrysanthemum soil, or failing this a mixture of two parts of light loam to one part of old Mushroom-bed manure with a very little soot added, answers well. Drain the pots roughly, and plant a single set in each rather deeply, good room being allowed for a top-dressing to be given when the shoots have extended above the level of the rim of each pot. Water carefully at first, only enough being given to keep the soil just moist, and when the pots are becoming well filled with roots do not let the soil become dry. Fairly deep boxes and large pots may also be utilised for a similar purpose, the sets being disposed 6 inches apart each way.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. K.).—1, *Begonia manicata*; 2, *Phormium tenax*; 3, *Maranta Veitchi*; 4, *Begonia Ingrami*; 5, *Peperomia argyrea variegata*. (P. B.).—1, *Selaginella caesia*; 2, *S. Kraussiana*; 3, *S. apus*. The Orchid is *Oncidium tigrinum*. (C. M.).—1, *Asplenium flaccidum*; 2, *Pteris cretica albo-lineata*; 3, *Cyrtomium falcatum*.

COVENT GARDEN MARKET.—JANUARY 17TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case ...	4 0	to 15 0
„ Canadian, barrel ...	10 0	15 0	Melons ... each	0 6	1 6
„ Nova Scotian, barrel	10 0	17 0	Oranges, per case ...	5 0	15 0
Cobnuts per 100 lb....	60 0	70 0	„ Tangerine, box...	0 6	1 9
Grapes, black ...	1 0	3 0	Pears, Californian, case...	6 0	9 0
„ Muscat... ..	2 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	3 0	to 4 0	Herbs, bunch ...	0 2	to 0 0
Asparagus, green, bundle	2 9	3 3	Leeks, bunch ...	0 3	0 0
„ giant, bundle	15 0	20 0	Lettuce, doz. ...	1 6	2 0
Beans, Jersey, per lb. ...	2 0	2 6	Mushrooms, lb....	0 6	0 9
„ French Kidney, lb.	1 6	0 0	Mustard and Cress, punnet	0 2	0 0
„ Madeira, basket ...	3 0	4 0	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz....	0 6	0 0	Parsley, doz. bunches	2 0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve...	1 6	2 0	Potatoes, cwt. ...	2 0	5 0
Cabbages, per tally ...	7 0	0 0	„ Teneriffe, cwt....	18 0	28 0
Carrots, per doz. ...	2 0	3 0	Seakale, doz. baskets	12 0	15 0
Cauliflowers, doz. ...	2 0	3 0	Shallots, lb. ...	0 3	0 0
Celery, per bundle ...	1 0	1 9	Spinach, per bushel...	3 0	5 0
Cucumbers, doz. ...	4 0	8 0	Tomatoes, per doz. lbs.	2 0	5 0
Endive, doz. ...	2 6	0 0	Turnips, bunch...	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Lilac, white, bundle ...	7 0	to 9 0
Arums	8 0	10 0	„ mauve, bundle ...	8 0	10 0
Asparagus, Fern, bunch...	2 0	2 6	Maidenhair Fern, doz. bnchs	8 0	10 0
Bouvardia, bunch ...	0 6	0 9	Marguerites, doz. bnchs.	3 0	4 0
Carnations, 12 blooms ...	2 6	3 6	„ Yellow, doz. bnchs.	4 0	6 0
Cattleyas, per doz. ...	12 0	24 0	Mimosa, per bunch ...	2 6	3 6
Christmas Roses, doz. ...	1 0	2 0	Mignonette, doz. bunches	6 0	8 0
Chrysanthemums, white			Narcissus, white, doz. bun.	2 6	6 0
doz. blooms	6 0	9 0	„ Yellow, doz. bunches	5 0	8 0
„ yellow doz. blooms	5 0	8 0	„ double, doz. bunches	2 6	4 6
„ bunches, var., each	1 6	3 0	Odontoglossums ...	5 0	7 6
Daffodils, double, doz. bnch	15 0	18 0	Pelargoniums, doz. bnchs	8 0	12 0
„ single, doz. bnch.	15 0	18 0	Poinsettias, doz. ...	12 0	18 0
Eucharis, doz. ...	6 0	8 0	Roses (indoor), doz....	6 0	8 0
Gardenias, doz. ...	6 0	8 0	„ Red, doz. ...	6 0	8 0
Geranium, scarlet, doz.			„ Safrano, packet ...	2 6	3 6
bnchs.	9 0	12 0	„ Tea, white, doz. ...	3 6	6 0
Hyacinth, Roman, doz. ...	8 0	10 0	„ Yellow, doz. (Perles)	5 0	7 6
Lilium Harrisii, 12 blooms	12 0	18 0	„ Maréchal Niel, doz.	6 0	12 0
„ lancifolium album ...	3 6	4 6	Smilax, bunch ...	5 0	7 6
„ „ rubrum...	3 6	4 6	Violets, Parma, bunch	6 0	8 0
„ longiflorum, 12 blooms	8 0	12 0	„ dark, French, doz.	2 6	3 6
Lily of the Valley, 12 bun.	12 0	18 0	„ „ English, doz.	2 0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Arums, per doz. ...	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz. ...	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Crotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	8 0	12 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	20 0
Ferns, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0



SIR JAMES BLYTHE ON THE AGRICULTURAL SITUATION.

SIR JAMES has evidently got an idea that the long lane is near a turn—that there is a chance, indeed a certainty, of a revival in agriculture. He considers we have slept too long, that it is high time now to wake out of sleep; he sees the giant stretching and yawning, and he prophesies great things. We confess we do not altogether follow the line of his argument; we have only a life experience of hard farming to set against his experience of model farming, with a large income to back it. He knows, or ought to do, as President of the British Dairy Farmers' Association, far more of dairy work than we do; but dairy farming is not everything; nor do we see in it a way for the salvation of the general farmer.

"In the multitude of councillors is wisdom;" that, of course, goes without saying. But what if we are heretical enough to doubt the ability of our advisers? Sir James lays great stress on the multiplication of societies more or less connected with or bearing upon agriculture. Of what practical value are many of these societies? The training centres are all very well in their way, but do they attract and train the right material? The experimental stations are good in their way, but do they not often only arrive at negative results?

As for the shows, we will begin with the Royal—a fine institution in itself, but cumbersome in its machinery, and getting rather behind the times. There seems no adequate return for its vast expenditure. The same may be said of other societies. We do not think that England will benefit to the extent Ireland has done, through any organisation society; there is such a gulf between the two classes of farm management. The National Poultry Organisation possibly has a useful future. The chair for agriculture will mostly benefit the holder. We understood that the training colony at Lingfield was mainly intended to pull up those male members of society who had drifted away from their proper sphere. An agricultural side to middle class schools may be of benefit, provided the teachers are the right men.

Sir James talks largely of the greater productions of the minor farm commodities. We quite agree with him there; more might be done. Woman lost us Paradise. Sir James argues that woman is to regain the earthly equivalent. He lays the greatest stress on the desirability of women cultivators. He recurs to it again and again. He speaks of it as easy, pleasant work—merely a pastime. We know the female sex does predominate, but can he really be in earnest when he talks of women filling up the gaps left by the exodus of the village labourer to the towns? It is wonderful what hard work women can do, but it seems hardly fair to expect them to do the work usually delegated to men. What class are the women workers to be taken from? Not the peasant class, they are fully occupied. The lower middle class find occupation as shop girls, teachers, telegraph clerks, and so on.

If the middle class, or as Sir James has it, "women of gentle birth," are to be the saviours of agriculture and the pioneers of small industries we are sorry for them. It is no joke producing poultry, fruit, butter, eggs, and flowers; it means much hard work, harder than Sir James imagines. He must first of all breed a class of women for his purpose, as they don't exist now. They must be intermediate between Amazons and those hard unsexed women who used to be found on Northumberland and Scotch farms and women from the pit brow. We thought we had seen the last of this state of things, and that in these latter days women could find employment in work more fitted for their physical strength.

We do thoroughly approve of any scheme that will bring rural children more in touch with their surroundings, and doing away with

some part of the educational code, and a substitution of agricultural classes. The change will be attended with many and serious difficulties, and there will be a great many mistakes made at first. We shall want to teach too much and go too far.

He is a bold man who will venture to discuss the subject of land tenure. Sir James thinks and advocates that occupying owners of small holdings will do better for themselves and better for the public than tenants of larger farms. He prophesies that this new century will early see large occupations of 200 to 400 acres cut up into small plots of 10 or 50 acres, thus finding employment for a man and his family. Men of this class have the hardest lives of any in the United Kingdom—their work is never done, and unless prices rise materially their profits are infinitesimal.

On the other hand we are to have large co-operative farms of 5000 or even 10,000 acres, where everything is to be done in a purely commercial manner. All new labour-saving appliances, best of machinery, and everything first-class. This, says Sir James, would solve the problem of scarce labour; only a small force would be needed, they would be of the best class, and highly paid. We think that here Sir James strikes a true note. Why should agriculture be the only industry which cannot be worked on a large scale? We see everywhere around us huge business firms, and the larger and more extensive they are the greater their success. Apply the same process to farming, but of course in the same practical manner. If buying and selling for 10,000 acres could easily be done by one person of reasonable competence and energy, eight or ten practical bailiffs would relieve him of all responsibility as to the carrying out of general orders, and he would be able to devote his time, apart from the market days in each week, to casual inspection of the various sub-departments, and the formulation of new enterprises.

On a farm of such extent the shepherd would be a man of the highest experience and character, and would be responsible for the well-being of the entire flock, as well as for the management of the staff of assistants who would carry out the work under his direction. The same system would apply to the cattle, horses, &c., and the whole could be attended in emergency by a properly qualified veterinary surgeon, who would be specially retained.

The blacksmith's and wheelwright's work would all be done on the premises, and middleman's profit saved, but great strictness would have to be exercised to prevent leakage in the way of commissions, but if the superintendent had a sufficient salary, and were worthy of it, there should not be much difficulty in preventing it.

We have great doubt as to the likelihood of a large increase in the number of peasant proprietors, or rather we might say proprietors of 50 acres, such as the old yeomen, unless a great advantage be given to small farmers (by the Government) in the purchase of their farms by very favourable terms in connection with the sinking fund.

After the present war is over we may not hear much of the sinking fund for a while.

WORK ON THE HOME FARM.

We have had more heavy rain, and flood water is visible in many parts. The land generally is too wet to take horses upon, and there is little carting to be done. For a few days, until the land dries again, we had better have a general cleaning up. The stackyard may receive extra attention, and refuse from every nook and corner taken to the compost heap.

The fowl houses will do with a good cleansing and whitewashing, the manure being put in a heap in the tillage shed, ready for turning and eventual mixing with superphosphate for the Mangold crop. The super might with advantage be bought now and stored; the price is likely to rise, and it could never be more conveniently fetched from the station or manure works.

Labour difficulties are becoming still greater. We hear of eight farm servants having enlisted from one parish, and our informant fears he is likely to lose the ninth. Fully one-third of the ploughmen will have left, and there are no spare labourers to take their places. To bring men back from the towns much higher wages are required; but farming can find no more cash—prices of produce will not allow of it. We hear farmers declare that this will be the worst year of their experience.

Turnips are about finished, and farmers are loth to begin consuming their Swedes; they are shy of realising how bad they are. Many sheep are being marketed and killed that should have been on

Swedes until May, and this accounts for the slackness in the mutton trade. Beef, too, after being dearer at Christmas, is a little cheaper again, and this may also be due to the same cause that has affected mutton.

Potato markets are very firm, another rise having taken place since Christmas. They are relatively dearer in the country than in the markets, which is a very good omen for the future. Sorting and delivery is general amongst growers, and stocks are very small for the time of year. There are many bad ones, the yield is disappointing, and only a good price can produce a fair return per acre.

KINDNESS TO ANIMALS.

As I imagine "our Journal" desires to encourage this, as well as every other good horticultural and agricultural tendency, I propose to mention two instances, much to be admired, which have lately come under my own observation. In the large county town in which I reside, in one of its principal streets, a fine Hampshire hog, or Berkshire pig, might have been observed just before Christmas progressing with much difficulty—presumably he had been overdriven. Presently he rolled over on his side, and lay there, declining to get up. Perhaps he held with John Bunyan, "He that is down need fear no fall." His owner went off to obtain a cart; and poor piggy was left to the tender mercies of the street boys, who at once swarmed round him like flies, the least of their cruelties being jumping up and down on him.

Just then two rather young ladies passed by on their way to their drawing lesson—or rather did not pass by. With flashing eyes and imperial gestures, they ordered the boys off, who, strange to say, slunk away. The next thing was a careful diagnosis of the patient, with a prompt decision that it was water that was wanted. This they darted off at once to get. The first shop refused; the next granted an abundant supply. Mr. Pig at once plunged in his snout, drank off a whole bucketful, then rose up of his own accord, and sauntered off to his destination, amid the cheers of the bystanders, no doubt grunting out his gratitude to his charming benefactresses.

The same two young ladies shortly after met a dog in the park. It was a very dirty dog, and a much neglected one, a big rough mongrel, half starved, who had strayed off to die there. At once the eldest girl posted off home, leaving her sister to watch over it. She brought back her mother's best macintosh, which had been readily lent for the purpose. Then the two girls struggled back, carrying in their arms the poor beast. It was tenderly received, sat up with all night, fed with bread and milk and other restoratives, but it died in a fit the next morning, and had to be buried in the garden, where it is to be hoped it will show its gratitude next summer by promoting an extra supply of fine Rose blossoms. Such good Samaritan maidens deserve much admiration.—A. C.

PROPER FORM OF A DAIRY COW.—She should possess a long, thin head, large nostrils for plenty of air, great breadth between the eyes, high forehead, a bright clear eye, sound teeth, thin neck, deep through the chest with large lung capacity, long and large backbone for plenty of nervous force, broad hips, high pelvic arch, thin thighs, well apart, giving plenty of room for a good udder. She should be deep through the flanks, with plenty of store room for food. The udder should be well developed, running well up behind and well forward on the body, with large milk veins, teats set evenly on the four quarters and of good size. A cow with these points well developed indicates that she is descended from a line of dairy cows and will rarely prove a failure if properly handled.—A. G. JUDD (in "American Agriculturist.")

WHERE THE STRAIN IS FELT.—Where is the greatest strain to a horse whilst moving a heavy weight? Is it not his hocks and hind legs? Do we not have this question answered at every sale we attend? If one animal has a better hock and hind leg than its neighbour with other points equally good, do not we see it invariably makes the most money? Yes; the hock is the great propelling agent of the horse, and I think the readers of this note will agree that if we have not quite the same coarse appearance in the draft horse of to-day, we have a more evenly balanced animal, with just as much size and far better feet and legs than in the olden times; consequently, a horse possessing far better wearing material, which is, after all, what our brewers and other large buyers want. They do not mind paying the money, but they want a horse that can stand the work for years, thus getting remunerated for their outlay.—("Farmer and Stock-breeder.")

HANDLING BUTTER.—It is marvellous how hard old customs die, and that is much to be regretted as far as handling butter and milk is concerned. As regards butter the hand need never come in contact with it, as we have often before said. There are the "Scotch hands" to take it from the churn, the "dairymaid" to press out buttermilk, rolling boards to bring it into shape, and beaters to make up the pounds, half-pounds, or pats. And then either the "Scotch hands" or beaters may lift the butter to the scales or elsewhere, so that it is easily enough seen that no human hands need come into immediate contact with the commodity. But, to-day, not one dairy in twenty throughout the country makes use of the appliances, but handles the butter to a most undesirable extent, and in the West of England actually beats the cream about with the naked hand until butter comes, using no churn at all.—("Rural World.")

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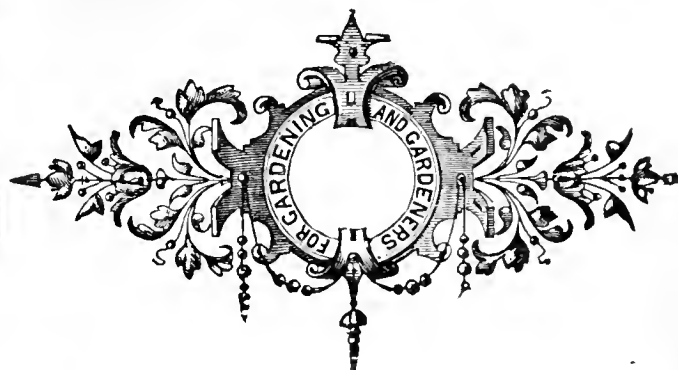
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Journal of Horticulture.

THURSDAY, JANUARY 25, 1900.

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WHERE GARDENERS MEET.

A CHAT ABOUT SOCIETIES.

IN the first place let it be understood that the word gardener is used here in its broadest sense, and does not apply solely to the professional element. Every man is included under the title who cultivates a garden and takes a pride in it, whether for pleasure or profit. There is something in gardening which tends to develop the communicative side of a man, and, perhaps, it was this characteristic which led to the formation of horticultural societies. This spirit of fellowship is fully understood among gardeners, and it forms a link which binds the sympathies of those imbued with a mutual love for the gentle art.

Illustrations of this are continually arising. Study the human side of a big flower show, and observe the interested conferences taking place among the little groups of gardeners, or listen to the animated arguments of those who critically examine the exhibits and the awards. The same spirit is apparent when one gardener drops casually in to see another and to "have a look round." Follow the pair through the garden, note the eager conversation as they discuss the successes and failures of matters horticultural and social, and you will realise at once the meaning of the gardeners' communicative spirit. The amateur and the cottage gardener alike possess it. The former would not take nearly the same interest in his plants and flowers if he alone saw them, and he feels that he has got some reward for his labours when his neighbour looks over the fence and admires the result of his efforts. The gardener is no recluse; he loves the companionship of those who share his sympathies, and wherever gardeners meet there gardening will be the topic of conversation.

At the mention of horticultural societies the doings of the leading bodies at once suggest themselves to us, and in them we have remarkable illustrations of progress and advancement. Every reader of the *Journal of Horticulture* has doubtless read in its pages of the fluctuating fortunes of the Royal Horticultural Society during the last

fifty years; at one time at the height of prosperity, then in the depths of adversity, followed by another slow rise to the position it now occupies—a position creditable to everyone connected with it, and one holding out possibilities of further advancement in the cause of gardening. Other leading lights among societies in the provinces have risen from small beginnings, and now hold positions of wealth and influence. We admire the energies of the gardeners at Shrewsbury, Edinburgh, York, and many other places where high-class shows are now held under the auspices of important societies.

Popular flowers, too, have their own bands of brotherhood, so to speak, such as the Rose, Dahlia, Carnation, and Chrysanthemum. The latter is one of the wonders of the horticultural world. We know how the National Society has developed from the infant gathering of a few Chrysanthemum lovers, and like Mushrooms, similar bodies affiliated or independent have sprung into existence, not only in large towns but in country villages, and one and all are illustrative of the fascinating powers of the autumn queen.

In scores of country villages there are healthy gardening societies, supported partially or wholly by amateurs, and it is to the good work done by many of these that I would particularly draw the reader's attention. The most prosperous societies are invariably those having the financial support of local gentry, and the horticultural assistance of their gardeners; but these are not indispensable, and it reflects great credit on the working men members of those bodies which are practically self-supporting. There are numerous places in the country having a kind of horticultural society which holds an annual summer show, but after it is over the whole thing is forgotten till the time again rolls round. In such cases, what should be the chief aim of a gardening society—viz., mutual improvement—is missed, and the best work is done where periodical meeting nights are in vogue, particularly through the winter, for the discussion of matters appertaining to gardening.

There are some people who say that it is only a mercenary spirit which prompts exhibitors to compete. Let it be said to the credit of many societies that their members are not imbued with such feelings, but grow and exhibit their produce mainly for credit and honour. I know more than one society that guarantees no prize money at all, and yet it always has good shows. It is fully understood amongst the members that points will be given to those occupying first, second, and third places in each class, but whether these points represent any money value depends entirely on the receipts. On one or two occasions, through bad weather and other causes, the receipts have been swallowed up by the expenses, and the exhibitors had to be contented with their points. They might have been disappointed, but the entries for the next show were just as numerous. This proves that it is not with the sole idea of gain that gardeners become members of societies and exhibit their productions; there is a deep love for the occupation at the root of it all.

Among other benefits resulting from the existence of a flourishing village horticultural society is the all-round improvement in the gardening. I could point to villages, possessing no society with its stimulating effects, where cottage and amateur gardening is at a very low ebb. The gardens are cultivated in a way, and there are the periodical sowings and plantings, but they are carried out in an old rule of thumb sort of method, with no ambition to produce anything above the commonplace. A combination of gardeners changes all this, and it is characteristic of the best of gardeners that they are the men who are always anxious to learn more. They are not content with the old rule of thumb methods, but become alive to the advantages of growing the best varieties, of using suitable fertilisers, and adopting means of fighting the foes which hitherto had been allowed to increase unchecked. An interest is awakened in gardening such as was never known before, and the horny-handed members of the village society find out that by adopting the best methods of cultivating their cottage gardens and allotments they not only obtain produce fit for the show board, but they are doubly rewarded by the weight and quality of the vegetables for the supply of the household.

In addition to the annual summer show and the monthly réunions, there is the social side—the meeting of the professional gardener with the labourer, who is also a gardener, and the well-to-do amateur who gardens for a hobby, each and all imbued with a kindred spirit. Pleasing sketches might be drawn of such gatherings in the club room of the village, and no lover of gardening could take part in one without realising that horticulture owes much of its prominence to gardening societies.—G. H. H.



ODONTOGLOSSUM CRISPUM DAPHNE.

THE *Odontoglossums* that were honoured by particular recognition by the Orchid Committee of the Royal Horticultural Society during the second half of last year were not particularly numerous; they, however, made up for sparsity of numbers by excellence of quality. Amongst those selected for the award of merit was *Odontoglossum crispum Daphne* (fig. 13), which was exhibited at the Drill Hall by Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs. This was an exceptionally beautiful variety, and was quite distinct from any of its relatives. The sepals were pure white,



FIG. 13.—ODONTOGLOSSUM CRISPUM DAPHNE.

but the ground colour was almost obscured by an immense pale violet patch; the petals were paper white, with sparse spots of a similar colour to those on the sepals. The fimbriated lip was white with a prominent brown patch, while the throat was yellow.

LÆLIA AT ROSEFIELD.

It is perfectly safe for anyone to make the assertion that we are living in an age of specialism, and the genius who could turn his hand to anything and do it thoroughly is becoming conspicuous by his absence. In the arts and sciences, the professions and trades, we find individuals take up a definite line and follow it until their knowledge of it is practically unique. As it is in our daily vocations, so it is in our hobbies, and in no direction is specialism more rife than in the ranks of our amateur Orchid enthusiasts. There are general cultivators of course, but broadly speaking every grower has his particular pet, which he studies until he has its requirements to a nicety. Among the true Orchid specialists is Mr. de Barri Crawshay, of Rosefield, Sevenoaks, whose forte was at the outset *Odontoglossums* especially of the *crispum* section, but who some years ago added *Lælia anceps* to his stock. A few *Cattleyas* are grown with one or two other Orchids, but they are minors in the estimation of Mr. Crawshay, and from personal observation I should say they will eventually be ousted entirely.

While having these facts in mind it must not be thought that this gentleman has no knowledge of or capability of appreciation for other Orchids as well as for flowers and fruits. As a matter of fact he is a real horticulturist whose particular partialities find vent in two channels about with which he makes it his concern to know all there is worth knowing. It is not the time of the year for one to dilate upon the beauties of *Odontoglossum crispum* from a floral point of view, but one must admire the stout substance in the leaves and the pseudo-bulbs, and the rude glow of health in which they are clothed. These flowers have been spoken of in these pages in past days, and will be again, no doubt, if their owner maintain or improve the present high status of the collection. For the time, then, let us leave

them to the fostering care of Mr. Crawshay and turn our attention to the stock of *Lælia anceps*.

It is more than probable that many people have not yet realised the glorious beauty produced by a number of these plants when they are in flower, particularly of course when exceptionally choice forms are to the fore. Personally I can say that, though always an admirer of *Lælia anceps*, I was more than surprised with the plants at Rosefield. It is not one or two spikes that are to be found, but hundreds rising from the healthy plants, some having passed their best stages of beauty, with others just at perfection, and more still to come. And so it will go for many weeks to come. In the different types of growth alone there are several object lessons, and needless to state Mr. Crawshay has taken advantage of them. He now speculates on the results that are likely to come with flowers of this or that plant, and not seldom his suppositions are fully realised. There are small plants and large ones; imported stocks that have not yet proved their right to hold a permanent position at Rosefield, with many that are prime favourites which are never likely to lose their places even though superior varieties may and probably will come to the fore.

With a laudable view to artistic effect Mr. Crawshay has had the choicest of those flowering at the moment placed together at one end of the central stage in a span-roofed structure. The little group makes a most gorgeous display, and yet one which, with all its brilliance, is essentially refined, for in the beauty of colour and form of *Lælia anceps*, there can be found nothing coarse. Superb in every respect are Mrs. Crawshay and Crawshayana (fig. 14), as might naturally be expected with such varietal names as these. Then the flowers of Chamberlainiana and Amesiana must have a word of appreciation for the size and colouration in the first place, and for the exquisite hues in the second. The spikes of white rising amidst the lively colours of those named not only show off its own beauty, but emphasise the glory of its companions. Others named and unnamed are in flower or bud, and one or two may find their way to the Drill Hall in the days to come, in which case we may rest assured that they will be decidedly above the average standard of merit, as Mr. Crawshay is no believer in the exhibiting of plants or flowers that will not add credit to his name.

Just one other point and the pen must cease its working. This is in relation to the practice that prevails of naming every flower that opens, be it good, bad, or indifferent. On this Mr. Crawshay holds very strong opinion, and holds that none should be given a specific name that is not in some decided respect a step in advance—more particularly when the plant is to be publicly shown. This is the principle on which this grower works, and though he may and does give some forms fancy names it is because they have decorative value for home use, and are never shown as varieties of super-excellence. Would that others followed this excellent example. Though Mr. Crawshay has such a familiarity with the wants of his plants, and does much practical work amongst them, he will not grudge a word of congratulation to his gardener, Mr. Cook, who must be given a place in the foremost rank of *Odontoglossum crispum* growers in the country.

CYPRIPEDIUM INSIGNE AT THE WOODLANDS.

As years succeed years the gardener, be he amateur or professional, who carries on his avocation within the area of London smoke, has greater and greater difficulties to overcome. Moreover, every season finds the radius of the smoky fog fiend extending, until places which a decade ago were quite clear, now have visitations at all too frequent intervals. Thus it is that the probabilities of success in the cultivation of any kind of plants become yearly less, and the labour involved in insuring even moderately satisfactory results grows proportionately. Few indeed are the plants that will withstand the baneful influences of London fogs, which enwrap everything as in a mantle, and leave in their wake a filthy

slime on all stock out of doors, and a sediment on the leaves of plants under glass. These substances, of whatever their nature, exercise an undoubtedly deleterious effect as well on persons as on plants, and the London gardener of to-day sighs for the sweet pure air of the country, where his own life and that of his plants would be materially prolonged.

In no phase of gardening are the prejudicial effects of fogs more pronounced than in that of Orchid growing, and the spirits of many growers must often be damped when hundreds of flowers are spoiled, and the foliage of plants is seriously injured. These troubles have come to more than one grower during the past autumn and winter, and possibly none have suffered more than Mr. R. H. Measures of The Woodlands, Streatham, whose collection of *Cypripedium insigne* we had the pleasure of inspecting a week or two before Christmas. There was no difficulty in finding abundant evidence of the damage that had been done to the plants, as the leaves presented an appearance which until now has been quite foreign to them. Flowers have come, and ere yet they have shown their beauties have been destroyed by fogs. If these effects follow with flowers of such substance as *Cypripediums* one can imagine the disasters among the *Cattleyas*, of which we learnt from Mr. J. J. Coles, the gardener, hundreds quite failed to develop from this cause alone.

Notwithstanding all this, the magnificent collection of *Cypripedium insigne* was worth going many a mile to see, and we would not envy anyone the task of finding its superior. The number of plants closely approaches to five thousand, and if we take the very moderate average of six blooms to a plant we have the extraordinary total of nearly 30,000 flowers. This, we are convinced, is decidedly below the actual number, and fortunately they are not all expanded at one moment, but come in constant succession over a long series of weeks. The length of time during which they last is, as has already been suggested, materially affected by the external climatic conditions, and it is much

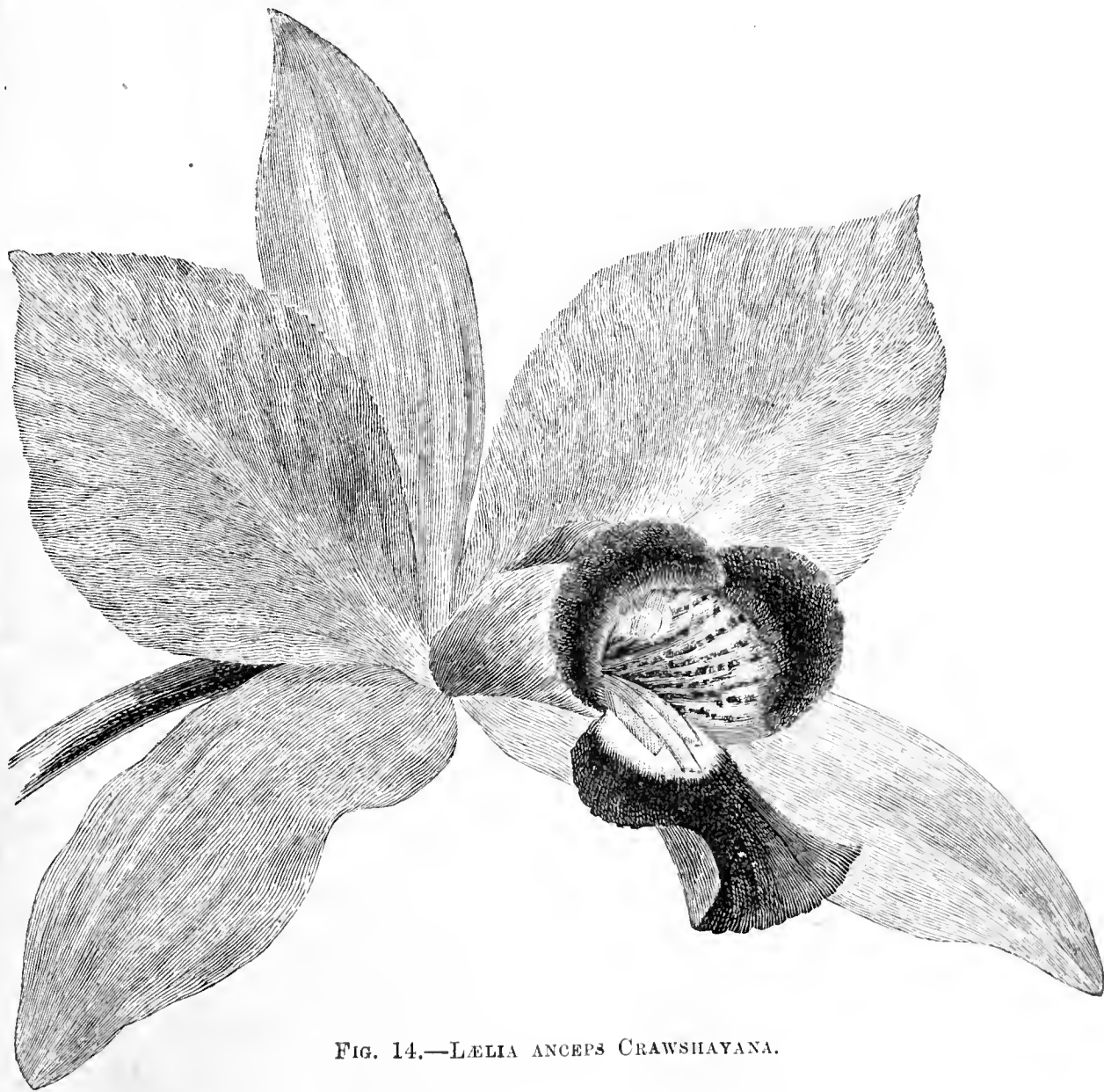


FIG. 14.—*LÆLIA ANCEPS CRAWSHAYANA*.

to be hoped that the autumn of 1900 will be more in favour of longevity than was that of 1899. Happily, neither Mr. Measures nor his lieutenant is likely to be disheartened, or we should have them packing their Lares and Penates and passing into districts more congenial to the plants, but less accessible to the interested visitor. "This has been," said Mr. Coles, "the worst season within my

experience, and has done damage to the plants such as I have never before observed."

After the remarks in the preceding paragraph having particular relation to the number of plants, we need frame no excuse for the omission of names. Not that the whole are named—indeed only a small moiety are so distinguished, and, needless to say, these are the cream of the collection. There is a wonderful variation in the colour and size of the flowers, while differences in the shape of the blooms and in the foliage are by no means uncommon. Every good form that is procurable finds a place at The Woodlands, and, as a consequence, what with these and big consignments of imported stock, the numbers are rapidly and persistently increasing. *Cypripediums* are not, however, solely confined to the insigne section, but comprise also hundreds of species and hybrids from various sources, as well as many that have been raised on the place. Needless to say some of these are extremely rare and valuable, and numbers of them are strikingly handsome. These, too, have suffered with the insignis from the untoward season they have just experienced.

Apart from the *Cypripedium insigne*, The Woodlands is world-renowned amongst orchidists as being the home of the finest collection of *Laelio-Cattleya elegans* in the world. For a number of years additions have been made, and extension is still in progress. Several of the forms are of surprising beauty, and it is seldom indeed that one can enter the house without finding something to admire beyond the handsome plants. Needless to say this is not exactly a time of plenty. *Laelia purpurata* again is largely represented, as indeed are practically all Orchids. *Odontoglossums*, *Cypripediums*, *Cymbidiums*, and others are planted out in various places, and luxuriate in the treatment to which they are subjected. *Phalaenopsis* have been a source of trouble in the fog, and their condition on one Sunday morning after a Saturday night fog was so bad that every leaf had to be immediately sponged, and even after such prompt measures some of the leaves were destroyed. *Cattleyas* and minor sections also have due attention, and the whole of them are thoroughly well grown.

Mr. Coles' charge, however, is not one of Orchids alone; on the contrary, there is a considerable amount of outdoor work to be done, particularly in the production of vegetables and flowers in abundance. Indoors it is mainly Orchids, but one house of fair size is completely filled with Carnations, mainly of the Malmaison section, whose condition proves that with the culture of these, as with that of Orchids, this quiet and unobtrusive gardener is perfectly conversant.—H. W.

CLIMBERS FOR COOL CONSERVATORIES.

In ordinary plant houses in which plants are grown for the embellishment of conservatories and other decorative work, it is not usually a wise plan to have creepers growing on the roof, for although at certain seasons they may not be inimical to the welfare of plants beneath, nevertheless there are times when they prove a great drawback to plant culture. In the case of a conservatory, however, the matter is somewhat different, as the majority of plants only make a brief stay in that structure during the time they are in full beauty, and the slight shade given by the climbers is often beneficial rather than otherwise. A roof lightly draped with attractive flowering plants also adds much to the general effect, and for this reason no conservatory can be considered complete without its quota of climbing plants.

In connection with their management, however, one point should be rigorously kept in view—viz., to keep the shoots thinly disposed, which is a far different matter from allowing them to form a dense thicket to the detriment of nearly all plants beneath; moreover, one good shoot thoroughly exposed will produce more and better flowers in a year than half a dozen when closely crowded.

The rose and white varieties of *Lapageria* are extremely popular, as the flowers are always useful for decorative work, and when the shoots are trained to the roof of a conservatory the pendulous flowers are displayed to advantage. If planted out in fresh loamy soil at the back of the hot water pipes, and given abundance of water during the growing season, they may be relied on to produce numbers of strong suckers annually when once the plants are well established, but they often need a little extra attention for a year or two to get them to start freely. Liberal syringings are of great assistance to *Lapagerias* during the growing season. Few insects attack them, the most troublesome being white scale, which should be thoroughly dealt with by sponging and syringing with an insecticide as soon as the slightest trace is observed. In order to keep the growth thinly disposed it is a good plan to remove some of the old shoots during winter, as with healthy plants there is usually not much difficulty in securing plenty of young growths, which ought to be regularly—yet loosely—tied in as they extend, otherwise they have a tendency to coil

round the trellis and get broken when disentangled. When planted on the south side of a house a light shade should be given during the summer.

Passifloras have few equals in their capacity to cover the roof of a large house quickly, and when the allotted space is occupied the shoots require thinning several times during the summer, or they will form a perfect thicket. When tying the shoots if a few moderately long ones are allowed to hang naturally below the trellis they have a very pretty effect when in flower. *P. coerulea*, though old, is still worth growing, as the beautiful markings of the flowers need close examination to find their true charm. *P. Constance Elliott* is, I think, the best white variety I have seen; it ought to be grown in every large conservatory. Two excellent deep red forms are *P. racemosa* and *P. Raddiana*. If these are planted near the white ones already named, so that the shoots may intermix, a fine effect is obtained. Good loam enriched with a third of decayed manure will grow all the greenhouse *Passifloras* well.

Hoya carnosa, though not one of the showiest of plants suitable for covering roofs or training under rafters, is certainly worth growing, as the wax-like pinkish white flowers are always admired, and form pretty and uncommon buttonholes. This plant is well adapted for a small conservatory. It succeeds in a pot, and requires a compost formed of peat and fibrous loam in equal quantities. During winter the soil should be kept dry, but not sufficiently so to cause the leaves to shrivel.

An old favourite, *Plumbago capensis*, still finds a home in many a conservatory; an ideal position for it is against a tall pillar near the centre of a house; the young shoots can then be allowed to grow at will, and in summer time will then form a wavy mass of delightful blue. Keep the soil dry during winter, and prune hard, are the only cultural details which need be given, as the plant is not in the least particular in regard to soil. For walls and rafters *Habrothamnus elegans* is a striking and floriferous plant. If planted in good loamy soil enriched with a third of manure, strong growths are made which produce fine pendulous clusters of flowers at the points. The best results are obtained by keeping the plants rather dry at the root in winter and growing hard in spring. It is, however, quite possible to keep them in steady progress throughout the winter. The variegated variety, *argentea*, is also highly attractive.

Ivy-leaved *Pelargoniums* are by no means to be despised as wall or roof plants. Strong growing varieties as *Souvenir de Charles Turner* and *Robert Owen* are seen to the best advantage when trained in such positions, as they require plenty of room to ramble, and the growths should, of course, be thinly trained. The only objection I know to their use as climbers is their tendency to become infested with green fly, which often necessitates fumigating a house when the other occupants are free from insects—a rather expensive proceeding.

All the strong growing *Fuchsias* make excellent rafter plants, and when once established they flower grandly year after year with comparatively little trouble, beyond watering and feeding freely during summer. When I visited the famous gardens at Chatsworth some twenty years ago the *Fuchsias* trained to the roof of one structure were a revelation to me, as I thought I had never before seen their charms displayed to such fine advantage. Few gardeners seem to be aware that the very useful *Asparagus plumosus* is an excellent greenhouse climber, which will thrive in quite a cool house throughout the year if planted in a border formed of loam and peat. The border should be watered as required during winter as well as summer; growth is then continually going on, and strong shoots are frequently sent up from the stool to replace any which are worn out though age. Where large quantities of this *Asparagus* are required for cutting, walls and roofs of cool houses should be covered with it, so that "armfuls" may be cut when needed.

Any climbing *Roses*, particularly such fine varieties as *Climbing Devoniensis*, *Alister Stella Gray*, *Climbing Niphetos*, *Climbing Perle des Jardins*, *Maréchal Niel*, *Reine Marie Henriette*, and *W. A. Richardson*, are well known to be admirably adapted for training to the roofs of greenhouses and conservatories. The selection above given, is, I trust, varied enough to suit the tastes of all, and those who have a house large enough to enable them to plant the whole collection should be able to produce—during the spring and summer months—a wealth of varied and beautiful flowers to meet the upturned eye, which, for a time, is raised from the pleasing task of viewing the floral gems arrayed beneath. With beauty above, below, and all round, who would not be happy in a well-managed conservatory?—H. D.

SNOW PROTECTION IN FORESTS.—Snow is often very injurious in Pine forests by breaking down and crushing the young trees, especially if the snow is wet when it falls. This injury is difficult to guard against, but in forest planting it is well to remember, says a transatlantic contemporary, that very tall thin trees suffer most. Choose those whose growth in diameter and weight keep better pace with their height. In many regions snow is very useful in protecting the soil and young trees, so that the harm it does is usually more than counteracted by its benefits.

REMINISCENCES OF AN OLD FLORIST.—No. 3.

It may well be imagined what a change it was from the lovely valley of the Dargle, with its rushing river and wooded slopes, to the cockneyfied seaside resort of Ramsgate; from a good sized house with its pleasant surroundings of garden and lawn, to a cottage whose back garden was not much larger than a tablecloth; and how little likely it seemed that I should ever take up the subject of horticulture again. Yet after about fifteen months' residence there I removed to Deal, with which place my name has since been associated. One or two things, however, concerning Ramsgate may be mentioned. It was almost with despair that I looked round what was called my garden. I had a border about 18 inches wide, and I thought I might fill it with something, so I tried *Verbenas*, and very soon had it gay with some of the older varieties of this charming flower. I had also a few plants in pots of a Lily that was very scarce then, but is now plentiful enough—*Lilium speciosum*, so that friends used actually to ask to see my flowers!

A somewhat amusing incident occurred while there. A friend, who had travelled with me on the Continent, came to see me. The plan then was to send passengers' luggage up to the various residences, marking them accordingly. They did not put the whole address on, whether terrace, place, or so on; but just "1, Vale," my house being 1, Vale Place. My friend was asked where he was going to, and he told the porter; the man replied, "Then that is one whale for you, sir." "Well," said my friend, "that is the largest order for fish I ever gave." However, no matter of horticultural interest was connected with my residence at Ramsgate.

But how came I to move on to Deal? In a curious way I had gone over to the reopening of a church at Canterbury by Archbishop Sumner. He had not long come to the diocese, and the clergy were mostly strangers to him. I had just been corresponding with him, saying I wished to remove; so when his chaplain told him who I was, he said, "I should like to speak to Mr. D'Ombrian," and in his affable and courteous way he alluded to our correspondence, and said something about a curate being wanted at, as I thought he said, Deal, and said so to him. "Oh, no," he said; "I did not say Deal, but by the Dean." After a little more conversation, as I was rising to go, he said, "By-the-by, you mentioned Deal; there is a church vacant there if you would like to have it." My surprise may be imagined. I asked if I might have time to think over it. He replied, "Oh, yes;" and most of my friends advised me to accept the offer, which I did, and the mistake of that one letter led to the whole alteration of my life; on such little matters do often the tenor of our lives depend. I knew little of Deal by previous report; I went over to see it, and determined, notwithstanding the advice of my friend the late Canon Hoare, who was then my rector, to accept the offer, although the stipend was a small one, and the work I knew was very heavy. This was in the year 1849, fifty years ago; and I have to record my experiences during that lengthened period.

It must be remembered that I kept no diary whatever of results connected with gardening, and therefore there will be no chronological order in what I have to tell. Some of the most noticeable events, of course, I remember the date of, but the great majority will be only vague guesses, somewhat approximating the truth. One of the things that most struck me at this time was the vast difference between the nursery establishments of London and Dublin. I do not know what they may be in the Irish metropolis now, but at that time there was not one which was better than those in any third-rate English town. Orchids were unknown, and, indeed, expensive plants of any kind found no place. It may well be imagined, then, how astounded I was at the grand establishments of James Veitch & Sons at Chelsea, Low & Co. at Clapton, Williams and Son in Holloway, W. Bull of Chelsea, and many others. Equally astonishing to me were the high prices given for new plants. It is no exaggeration to say that many a plant sold for more than its weight in gold, and several of the collections of amateurs were valued at thousands of pounds. Since those early days of what we may call the Orchid mania, when a single plant was sold for between £200 and £300, there have arisen various establishments, containing house after house filled with the choicest productions of various kinds, and affording a feast which no other country, I believe, could furnish.

There were also other flowers which were then appealing to the taste of the amateur, and amongst these was the *Chrysanthemum*, and numerous were the pleasant pilgrimages I paid to that home of the flower in those days—the Versailles Nursery of Mr. John Salter of Hammersmith. On many a dreary November day I wended my way to this nursery to discuss the merits of the new varieties of incurved flowers which were then all the rage. I well remember the introduction of the little Chusan Daisy, as the Pompons were then called, and also that of the Japanese variety, which were at first more scoffed at than welcomed by the admirers of the older types. No one could, of course, then have foreseen the wonderful revolution which these

were to make in the development of the flower, and indeed it must have astonished the growers themselves. Take, for example, a bloom of the old Red Dragon or Meg Merrilees, and compare them with those of Phœbus or Vivand Morel, and it will be found very difficult to believe that they are developments of the same flower.—D., Deal.

ORCHARD AND GARDEN PESTS.

THERE are few cultivators who have not a great abhorrence to the presence of pests in their gardens, and many persons go so far as to say that compulsory measures ought to be taken to compel the careless and indifferent gardeners of all sections to adopt such preventive and remedial measures as may be required to keep their crops and gardens clean—if not for their own sake, for that of their neighbours. It is hard on a clean, energetic, and thrifty gardener to have as a near neighbour one of the careless, indifferent, and happy-go-lucky sort, who does not see the desirability of destroying weeds till they are seeding, or diseases and insects till his plants are smothered in filth.

Possibly men of this calibre have an idea that such a state of things balances the production and demand, and thereby enables the growers to obtain better prices, as I note a colonial pomologist writes to the effect that he considers the codlin moth the fruit growers' best friend, for without it he says the markets would be everlastingly glutted, and the Apples worthless. Even in the face of this argument, however, I prefer clean, healthy trees, and perfectly sound fruit. Many people object to Acts of Parliament which compel them to spray and bandage as interfering with their so-called liberty. They cannot do as they like with their own. Why, might I ask, should they, if it is detrimental to the interests of their neighbour, or to the development of an industry which is for the common good? Such measures would not be passed for those who do their best to have clean gardens, trees, and crops, but even these would have to give the inspector all the necessary information, and show him over the orchard or garden at a considerable cost in the shape of time, simply because of the black sheep who have spoiled the flock.

An intimate friend who grows fruit largely in New Zealand says that "economic fruit growing cannot be a success in that colony until men with experience and capital enter the industry on an extensive scale, which no one is prepared to do so long as our laws allow the careless and lazy orchardist to breed all kinds of insect pests that invade all orchards in the district, and make profitable fruit raising impossible." In 1898 the colony paid for imported fruit something like £71,000. They have had an Orchard and Garden Pests Bill before their House of Representatives, but whether the Bill has yet been passed I cannot say. The main objects of the Bill were (1) To prevent the introduction into New Zealand of insects and diseases affecting orchards and gardens; (2) to provide for the eradication of such pests as infest the trees; and (3) to prevent the spread of any such pests.

The pests mentioned in this colonial Bill are the Mediterranean or West Australian fruit fly (*Halterophora capitata*), San José scale (*Aspidiotus perniciosus*), Queensland fruit fly (*Tephrytes tyroni*), Vine louse (*Phylloxera vastatrix*), American blight (*Schizoneura lanigera*), Apple scab (*Cladosporium dentriticum*), codlin moth (*Carpocapsa pomonella*), and the mussel scale (*Mytilaspis pomorum*).

In my opinion there is nothing unreasonable in a Bill of this nature. Relative to the first clause, I would ask what can we in England do towards preventing the introduction of insects and diseases? What about the *Chrysanthemum* rust and the American blight? Are they introductions? If so, what measures could have been taken to prevent their introduction into this country? Can we adopt any means to prevent the introduction of other insects and diseases? Is the question worth our consideration? If so, may we have the opinions and suggestions of the many experienced contributors of the *Journal of Horticulture*? To eradicate and prevent the spreading of garden pests many methods are in vogue, the majority of which would no doubt if persistently followed prove efficacious.

The San José scale is evidently very prolific if, as one large fruit grower states, that "one female alone can produce 5,600,000,000 descendants in four months." I trust we may never have personal proof of its rapidity of propagation. Local influences have unquestionably much to do with the spread and development of various insects and diseases. Good cultivation is an important factor in keeping insects and diseases at a minimum, for without this spraying bandaging and other methods would be of little use. I am acquainted with a New Zealand fruit grower who obtained in 1898 13s. per case of 48 lbs. for Apples whilst the average price was 5s. 6d., and this was very largely, if not solely, due to good cultivation.

The sum total of cleanliness in our gardens, of productiveness and of success generally, may be condensed into the one word—cultivate—which should ever be the fruit grower's watchword.—S. II.

CYCLAMENS AND PRIMULAS AT READING.

It is not every year that the fates are sufficiently kind as to allow me to visit Reading during the dull winter days, to be cheered and invigorated by the sight of the Cyclamens and Primulas in Messrs. Sutton & Sons' Portland Road Nurseries. Come when it may the opportunity should be seized to go, for the spectacle presented by thousands of plants in 5-inch pots is one that will not readily be forgotten. There are no huge plants, but all are compact and sturdy, and in the best possible condition to perform the particular function for which they are grown, that is seed bearing. They are not required to make huge growth, but to develop all the essential organs to the highest state of perfection, and thus insure a bountiful harvest of seeds. Under other circumstances larger plants would be more advantageous, but not in this case, and those who desire size may rest assured that those which thrive at Reading will flourish elsewhere if their particular requirements are carefully sought and provided for.

Thousands of handsome little plants occupy the structures erected for them, and each winter finds a beautiful display, something like its predecessors, and yet somewhat different, for new forms or colours are ever pushing to the fore. This is more particularly the case with respect to the Primulas, which always show advancement. With Cyclamens, however, such a state of excellence has been attained to, that the difficulty of forging ahead becomes greater and greater, and a variety to receive a special name must literally be without fault. There are amidst the Reading strain of *Cyclamen persicum* colours that were undreamt of a few years ago, and with this form of beauty has been retained the floriferousness and the splendid marbling of the leaves, which are found in the type. Take for example *Salmon Queen* and *Vulcan*, each in its way perfect. The flowers are of wonderful substance, faultless in shape, and each in their respective colours unique. Each produces immense numbers of flowers, and in both instances the habit is excellent. What more desirable attributes could be desired? "Fragrance" someone may say; but let them have patience, for there are indications that even this will come eventually.

These are by no means the only colours in the *persicum* section, but they are chosen as the best from the writer's point of view. Those who would doubt or disagree can go to Reading and decide by personal inspection; they will be heartily welcomed, and will return home the wiser for what they have seen.

The dividing line between the *persicum* and the *grandiflorum* section is very clearly marked, and each has its ardent admirers, who see far more beauty in their respective favourites than they do in any others. Here we find stronger growth, stouter and bigger leaves, and bolder flowers. The votaries of the *grandiflorum* type pin their admiration mainly to the size of the flowers, as the leafage is not so handsome as in the smaller flowered group. In this respect, however, advance can readily be seen, as it is not so very long ago that the leaves possessed no particular beauty, whereas many of them now are considerably marbled. Perhaps Messrs. Sutton & Sons will some day give the horticultural world a *Cyclamen grandiflorum* with the freedom of flowering and the charmingly marked leaves of the smaller section.

Of all the colours amongst the *grandiflorum*s I must still place the pure white as prime favourite, with the white on a crimson base as a wonderfully close second. These two occupy the same position in my regard as the two named in an earlier paragraph. There is no garish beauty, but rather have they a simpler charm, which appeals with greater force than the more effective crimsons, purples, and others. Naturally enough these have their admirers, as must have all such excellent flowers, but I speak now from a purely personal standpoint. There can certainly be no two opinions as to the value of Cyclamens for Christmas flowering, and hundreds of gardeners would miss their presence, and have difficulty in finding an equally good substitute for various purposes at the festive season. It is still an open question as to whether the curious papilio section will ever run level with the others for popularity. So far they are decidedly in the rear, but the tide of fashion may turn in their favour, when they will quickly range up in the front rank.

In the houses devoted to the Primulas there are many varieties to admire amongst the single, the double, and the stellata sections. The plants are arranged in such a manner as to call forth the highest praise, for they are staged in large batches of colour. For instance, in one house are some hundreds of *Crimson King*, and they rivet attention and form a lasting impression. These, indeed, are the results that accrue from seeing several of the varieties, some of brilliant hue, others owing their charm to chasteness of shade, while still more range between the two. There are varieties with identical flowers and different foliage; in the one case it will be plain and in the other Fern-leaved. Both have beauty, and show their flowers up in a peculiarly distinct manner. The Reading Blues are well known for their high quality, as are such whites as *Pearl* and *Snowdrift*, which now require no cards of commendation. A new break, of which *The Duchess* may be taken as typical, is very beautiful; the flowers are striking, with their zone of brilliant rose round the eye, and this encircled by white with an attractive rose suffusion. There are other new colours, too, but of these more will certainly be heard in the future.

The Star Primulas have been accorded a great meed of admiration of late years, and they may now be expected to maintain their position.

The flowers have not the size, substance, or form of the *sinensis* section, but they are of more graceful habit, and branch and flower with remarkable freedom. These, too, are becoming more diversified in colours every year, and have a beauty that is quite their own.

Amongst the semi-doubles and doubles there are the well known Reading varieties that may be taken as types of excellence in their respective shades. But to these must be added the newer ones, of which *General French* will be regarded as the most important. This has received an award of merit from the Royal Horticultural Society, and this alone is a true hall mark of excellence. It is a very deep rich crimson flower, freely produced by a compact growing plant, having elegant leaves. Many others might and perhaps ought to be particularised, but time forbids that more shall be written save to advise those who have not been to Reading to go as soon as possible, so that they may lose none of that charm and beauty which were so much admired by—R. H. R.

REMARKABLE in extent and variety as was the fine collection of Primulas shown by Messrs. Sutton & Sons of Reading at the Drill Hall on the 9th inst., and so happily helping to save the meeting from failure, yet no comparison could well be instituted between that exhibit and the collection of these beautiful winter flowers seen in their home, the long span houses at Reading. It is not merely that one may see there so many more plants, but under the clear bright light the true beauty and excellence of the flower is so much more fully manifested.

As the primary object of the firm is to obtain seed, sowings are not made until July, and the plants are all in 48's. Thus whilst so beautifully in bloom thus early in January, they will increase in floral beauty as the year extends and light increases, so that the considerable work of pollination which has to be in every case artificially performed is materially assisted. February and March are important months for the performance of this work.

The Reading Primulas have been written about continuously, but those who may have seen them as I have for many successive years still find them to be each recurring winter wonderfully attractive. No doubt much of this attraction is due to the great stocks of plants seen, each one so true in form, colour, size, and everything. Then the clear light aids so much to display the colours of the flowers, and the admirable culture bestowed helps also to one's appreciation.

Whilst every year shows some advance in form, variation, or colouring, the present season seems to have been peculiarly rich in that respect, for there are several singularly charming novelties seen that must in time become exceedingly popular, and will, when they can be put into commerce, be in great demand. Certainly *The Duchess* is a great beauty. The flower stems are stiff and erect, habit excellent, flowers large and finely fringed, and the colour white, but having round the eye a ring of intense rosy red, that shades off into the white indefinitely. This is indeed a beauty, and most distinct. Then there is one that, because even more delicately coloured, though in all other respects alike, that I even preferred to the *Duchess*; that, so far, has no name, but it will have to be "Princess" at least. The ground of the flower is flesh white, verging to a ring round the eye of soft rosy flesh; a singularly charming flower. Another of great beauty has flowers of vermilion round the eye, shading off to pink. There is, too, a gloriously rich magenta, with lemon eye; one of singularly deep solid blood crimson; another of a heavy plum blue; one having a deep peach centre, shading off to pale pink; and another having bright red centre, shading off to rose.

The old Reading Blue has been intensified, whilst by crossing that on to a good white with pale green stems there has resulted a very pleasing Cambridge blue, a shade that is very refined. That brilliant heavy hued *Crimson King* is indeed a superbly coloured variety, being in striking contrast to *Snowdrift*, the pure white form which again is flanked by the crimson on the Fern leaf, the colour of the flowers in this case seeming to be much intensified. Then *Pearl* is another beautiful pure white on pale green foliage. But singles are in every direction remarkably varied and beautiful, yet cannot be all noted.

Still a word is due to the charm as winter decorative plants of the star or stellata section, large quantities of which are here in variety. There is the original form, then comes a greatly improved white on intensely dark foliage, and a third white on pale green foliage, the habit being more compact. There is also a carmine or pink flowered section, all abundantly blooming. From out of the entire collection some improved forms or possibly improved forms have been selected, but the merits of pink flowers will not outweigh the absence of the graceful branching pyramidal habit if that be lacking.

The semi-doubles are in great abundance. Blood red, pink, white, carmine, carnation flaked and splashed, blue, and others are all as fine and as effective as Primulas well can be. One long lean-to house devoted to trials will soon possess special interest. Here are grown in large 60-sized pots some plants of every stock of Primulas in the hands of the firm. It says much for the excellence of the culture given that out of the several hundreds of these plants here every one is as good as the other, so that the trial will be a perfect one. Of course these are from a rather later sowing than were the many stock plants in larger pots. But it will enable visitors to discern a week or two later how much floral beauty such small plants can produce.—A. D.

LATE SPRING PLANTING.

I CAN assure Mr. Pearson that I am fully alive to the difficulties he speaks of on page 24 as to getting all planting done at the most suitable time, and not once, but many times have I used the very arguments he has when my employer has asked me to write and "hurry up" the nurserymen who were entrusted with his orders; and there has not been a week since last October that I have not been planting more or less when the weather has been open. I have planted some scores of acres within the last four years with a rather small staff of men, and Mr. Pearson knows, and so do I to my cost, that this cannot be done in a few weeks; but I say, as I did before, that the two seasons I mentioned are the best of all for the purpose, and can with perfect assurance advise anyone who is planting to make the utmost use of them. It was no hobby that I was riding, and it is not yet ridden to death.

I should like to say, too, that the very trees and shrubs I mentioned were sent more than fifty miles by rail, and not shifted from one part of the garden to another. This, I think, quite refutes your correspondent's argument that "this"—i.e., spring planting—"is of no use to the ordinary planter, who has to procure his plants from a distance." But I could give many such instances if need be, and can point out to a single row in certain places where planting has been done in the same field at correct and incorrect times.

I quite agree with all Mr. Pearson says respecting the proper cultivation of the ground both before and after planting; and here again I could, if need be, a tale unfold. But the fact still remains that the best of all times for planting are those named, be the nurseryman never so busy.—H. R. R.

I THINK it is generally understood that autumn planting, say as soon as the leaves have fallen, is the best time for fruit trees and Roses. As Mr. Pearson points out, however, it is not so imperative to plant early as some growers would have us believe. As Mr. Pearson rightly states, the future growth and ultimate success of fruit trees is almost entirely a matter of management, first in planting when the soil is in proper condition, then how they are planted and of what the after care consists.

To insure success the planting and after management must go hand in hand. It would be useless to plant well and be inattentive to the wants of the trees afterwards. Neglect of the retention of moisture in the soil by mulchings, or simply stirring the surface soil and allowing it to crack, are the points which would hamper the progress of any tree, no matter how well it might have been originally planted. Personally I should prefer to plant an Apple tree as late as the first week in April rather than not at all that season. With intelligent care abundance of new roots would be made, and the tree should be thoroughly established by the following November, even if it did not make much growth.

My aim with newly planted Apple trees, for instance, is to manage them in such a way that when November again comes round many of the newly made shoots require 2 feet of growth pruning away. Such trees have without doubt a sufficiency of the right sort of roots and vigour, and it would not be unreasonable to look for a crop of fruit in one and a half year from the time of planting.—E. MOLYNEUX.

APPLES AND FROZEN WATER PIPES SPLITTING.

It is rather amusing to ordinary mortals to read the conflicting remarks on the above subject of "A. D." and "H. Richards," two correspondents who contribute largely to the literary food of your readers. I do not profess to belong to the angelic host to which "A. D." refers on page 34, nor is it necessary for me to attempt to render any assistance to "A. D.," as his position in this matter is beyond dispute.

My object in penning these notes is to record an incident that happened in the winter of 1874, and, which I think substantiates the view or "suggestion" of "A. D." in relation to the splitting of Apples. In the year referred to there was a quantity of Apples stored in a room over a coach house facing due north. On one night the thermometer registered 24° of frost, and, as there was not sufficient means for excluding the cold air, the whole of the fruit was frozen quite hard.

So long as the frost continued the skins did not present a ruptured appearance, but shortly after the thaw set in the largest fruits burst their skins, and the whole of the frozen fruit was utterly spoiled. The water in a number of bottles that were used for bottling Grapes in the same room was frozen into solid lumps of ice, with the result that every bottle was burst. The damage, however, was not caused in either case by the thaw but by the expansion of the frozen water. Frozen water is lighter than water in a liquid state, otherwise how could it float on the surface?

I would suggest to "H. Richards" to make the following simple experiment. Fill a jar, such as is used for holding marmalade, up to the brim with water, and expose it to 15° or 16° of frost, when if the result is similar to what I have had, he will find the frozen water has risen considerably above the top of the jar, and in addition he will discover,

when the thaw sets in, that the jar has been split and the bottom forced out, which I think is sufficient proof that frozen water increases in bulk.—W. N., *Holmes Chapel*.

I CANNOT say that I was pleased with "A. D." when I read his remarks on page 34. But let that pass. By a printer's error, or from some other reason, "cold" was printed instead of "cooled," and despite the allusion to the Polar regions I must, with all deference to "A. D.," maintain that I was right. I know well enough that ice will break pipes, but I also know that heat applied to a frozen pipe has the same effect though that pipe has been frozen for weeks without bursting.

But really this has nothing to do with Apples splitting in "A. D.'s" case, as the room in which he kept them he describes as cool, and simply to prove that his theory was not the correct one I sent the note referred to. "A. D.'s" question as to whether I have seen pipes burst by having the contained water heated is altogether wide of the mark. Engineers always leave vent for expansion, but if it interests "A. D." to know it I have seen the water run over the top of a feed cistern when only very slightly heated, and that is quite proof enough for me that water does expand when heated and contracts when cooled, no matter what it does when it freezes, and ceases to be water in a mechanical sense. To cavil, however, at such a simple matter is only to confuse the issue. At all events, such a homely instance as the baking of a thin-skinned Apple such as "A. D." describes will show whether the said Apple will split under the influence of heat or not. I think I have seen them do so.

"Ret Rail" is really a very funny man when he likes, and the game of filling bottles and freezing them is an excellent one but slow. Bothy men have played it in their young days, so doubtless have college students, and personally I may say that if ever I meet "Ret Rail" I can show him the results of the fun upon my own person.

And now may I suggest a little experiment to "Ret Rail?" Let him fill a common fish or tobacco tin with cold water and place it in quite a level position over a gas jet. Light the gas and keep the surface tension of the water broken by means of a pin or a pencil, and note how long it will be before the heated water runs out. This will not endanger life or limb.—H. RICHARDS.

THE SALE OF POISONS.

IS AN AGENT A SELLER?

IN the Queen's Bench Division on Wednesday, January 16th, before Justices Grantham and Channell, the appeal, *Pharmaceutical Society v. White*, was heard. It was an appeal by the Pharmaceutical Society from the decision of the County Court Judge of Worcester. Mr. Crump, Q.C., and Mr. Grey appeared for the Society, and Mr. Cavanagh appeared for the respondent.

Mr. Crump said this was an appeal from the learned County Court Judge by way of an appeal in an action brought to recover a penalty under the Pharmacy Acts of 1852 and 1868. The action to recover the penalty was brought in the Worcester County Court, and the Judge decided in favour of the defendant, that he had not been guilty of an offence under the Acts. Section 15 of the Act of 1852 provided that any person, not a duly qualified chemist, who should compound or sell any poison should be liable to a penalty of £5.

The respondent, Mr. White, was a florist carrying on business at Worcester, and he sold a weed killer containing arsenic, which was one of the poisons mentioned in the first schedule of the Pharmacy Act. Mr. White admitted that he sold the weed killer, he admitted it contained one of the scheduled poisons, but said that in selling the weed killer he was acting as the agent of the Boundary Chemical Company, which carried on its business in Liverpool. He would take the order, take the money, and give a receipt, but he did not keep the poison in stock. When he received the money he sent the order on to the Boundary Chemical Company at Liverpool for them to execute, and the company would deliver the weed killer to the purchasers from White. Mr. White made a profit in the transaction. The learned County Court Judge found that Mr. White was not the seller, that he was selling as agent for the company in Liverpool, and not for himself, and consequently he was not a person within the meaning of the section of the Act. He (Mr. Crump) submitted that Mr. White was as plainly as as possible the seller of this particular poison. The Act was for the protection of the public.

Mr. Justice Grantham, without calling upon the other side, said he had no doubt that in this case the County Court Judge was right. White was not the person who was managing the sale; he was merely the conduit pipe to introduce the buyer to the seller. Mr. Justice Channell concurred, and the appeal was therefore dismissed.

Mr. Crump asked for leave to appeal, as the case was very important to the Pharmaceutical Society. They considered there was a new means of selling poisons without incurring liability.

Leave was given to appeal on certain terms.

SEED DISTRIBUTION IN AMERICA.—The Department of Agriculture began its distribution of seeds a little earlier this year than last, forwarding them south at the beginning of January. This year the seeds for distribution to all parts of the country will consist of 13,000,000 packets of vegetable seeds, 1,560,000 of flower seeds, besides field and lawn grass seeds.—("Washington Post.")



Recent Weather in London.—The weather in the metropolis during the past few days has kept very mild and unseasonable. On Sunday it was wet almost the whole of the afternoon and evening, the downfall being very heavy at intervals. On Monday it was very dull, but except for a few small drops no rain fell. On Tuesday the conditions were practically the same as on the preceding day. Wednesday was wet at intervals.

Weather in the North.—The two weeks ending 22nd inst. have been marked by very variable weather. Occasionally there has been a slight frost in the morning, never exceeding 3°. Snow has fallen, but to no great extent. Sleety showers and rain have been frequent, and some of the nights exceedingly wet and boisterous. The 18th was perhaps the finest day, but the following was extremely wet. Sunday was showery, the night tempestuous, and a high westerly wind continued throughout Monday.—B. D., *S. Perthshire*.

Continuation School Gardens.—Mr. John Ettle, county instructor in gardening for the Somerset County Council, sends us a report, showing that 119 educational plots were cultivated by youths under skilled guidance in the county last year. The silver Banksian medal of the Royal Horticultural Society was granted to the worker of the best plot. The Council of the Society allowed Mr. Ettle to purchase the medal, "thus forming a precedent, as the rule has been only to supply medals to affiliated societies."

Isle of Wight.—The annual meeting of the Isle of Wight Chrysanthemum Society was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided over a small attendance. Mr. C. H. Cave, Honorary Secretary, presented a financial statement of the affairs of the Society, which showed a very small credit balance; insufficient to carry on the exhibitions in the future. Therefore, after a lengthy discussion, it was decided to wind up the affairs of the present Society, and to call a public meeting with a view to establishing a new Society.—S. H.

Hessle Gardeners' Societ —There was a good attendance of members at the fortnightly meeting of the above Society, held on January 9th. The lecture for the evening was on "Plant Life," illustrated, by Mr. Knight, Pearson's Public Park, Hull. It is worthy of notice that the lantern slides for the purpose of illustrating the scientific remarks were of Mr. Knight's own production, and were deserving of great praise. The entertainment was highly instructive. Votes of thanks to the Lecturer and Chairman terminated a thoroughly enjoyable evening.—J. F. D., *Yorks*.

Death of Mr. Blackmore.—We regret to announce the death of Mr. R. D. Blackmore, the novelist, which took place on Saturday at his residence at Teddington. The deceased was a son of the Rev. J. Blackmore, and was born at Longworth, Berkshire, on June 7th, 1825, so that he was in his seventy-fifth year. He was educated at Blundell's School, Tiverton, and was a scholar of Exeter College, Oxford, where he graduated B.A. in 1847, taking a second class in classics. He was called to the Bar at the Middle Temple in 1852 and practised as a conveyancer, but he soon began to devote most of his time to literature, varying his pleasures in that direction by fruit growing, a pursuit in which he took an immense interest. Mr. Blackmore was a connoisseur in Pears, and grew an enormous number of varieties. Many of these were quite useless for commercial purposes; and yet because they did not "pay" he was apt to write letters to the "Times" against fruit culture generally as a profitable industry. He did not perceive that the most successful growers proceeded on exactly opposite lines to himself, namely, in planting many trees of a few wisely selected varieties, instead of one or two trees of as many varieties as he could obtain or find room for. He had quite a museum of Pears, interesting but unprofitable, and could happily afford to indulge in the luxury. Mr. Blackmore was a good judge of the quality of fruit, and was at one time, in the eighties, a member of the Fruit Committee of the Royal Horticultural Society. The late Dr. Hogg embodied some of his experiences in the "Fruit Manual."

The Driest Spot on Earth.—The reputation of being the driest spot on earth is claimed for Payta, in Peru, a place about 5° south of the equator on a coast that has risen 40 feet in historic times. According to a contemporary, Professor David G. Fairchild, a recent visitor, reports having reached there in February just after a rain of more than twenty-four hours, the first for eight years. The average interval between two showers is seven years. Sea fogs are common. Of about nine species of plants noticed, seven were annuals, and their seeds must have remained dormant in the ground for eight years. In spite of the lack of rain, the long-rooted Peruvian cotton is grown in the dried-up river bed, furnishing crops that yield subsistence to the natives.

Gardening Appointments.—Mr. Charles Young has been appointed gardener to Eustace A. Smith, Esq., Longhills, Lincoln. Mr. Young belongs to a good gardening family, of which his brother, Mr. Arthur Young, the competent head of Witley Court Gardens, is the senior representative. Mr. W. P. Bound, for the past two and a half years gardener to Mrs. Leveson Gower at Bill Hill, Wokingham, has been appointed head gardener to J. Colman, Esq., Gatton Park, Reigate, Surrey, in succession to Mr. W. King, who died recently. Mr. W. J. Blake succeeds Mr. Bound at Bill Hill, Wokingham. In the place of Mr. Whitaker who has resigned the position of head gardener at Crewe Hall, Mr. Fenner, who has been head gardener to the Right Hon. the Earl of Crewe, at Fryston Hall, Ferrybridge, Yorks, has been appointed, and has now taken over the charge. Those who know Mr. Fenner will be pleased to hear of the appointment.

Royal Meteorological Society.—The annual meeting of this Society was held on Wednesday evening, the 17th inst., at the Institution of Civil Engineers, Mr. F. C. Bayard, L.L.M., President, in the chair. The Secretary read the report of the Council, which showed that the most noteworthy event in connection with the Society had been the removal of the offices and library from 22, Great George Street, to new rooms at 70, Victoria Street. This step was rendered necessary by the acquisition of the former premises by the Commissioners of Her Majesty's Works and Public Buildings for the erection of new Government offices. Mr. F. Campbell Bayard, in his presidential address, discussed the meteorological observations made at the Royal Observatory, Greenwich, during the fifty-one years, 1848-1898, and brought out in a novel way many interesting features in the variability of the various observations of the barometer, maximum and minimum temperatures, relative humidity, direction of the wind, and rainfall. These were shown in a diagrammatic form on the screen by means of a number of lantern slides. The address was also illustrated by various views of the Royal Observatory and of the instruments employed. Mr. G. J. Symons, F.R.S., was elected President for the ensuing year.

The Richmond and R.H.S. Joint Exhibition.—Great as is the attraction afforded by the Temple Flower Show at the end of May, the two days' exhibition arranged for the present year in the Old Deer Park by the Richmond Horticultural Society and the Council of the Royal Horticultural Society, should prove to be a very formidable rival in attractiveness to the first named show, as it will be held at the end of June, and in the fine area at Richmond mentioned, where the surroundings are essentially picturesque and rural, where there is ample room and fine expanses of verdure, overhanging trees, and, in sunshine, pleasant shade, with undoubtedly a grand exhibition, for it is certain that on so auspicious an occasion the many habitual exhibitors at the R.H.S. meetings will support the national society in this new venture. Few towns near London, and it is not more than eight miles from Charing Cross, are so easily reached as Richmond. Lines of rail from literally all directions centre upon it, and therefore it can be most easily reached. The Deer Park is midway between the town and Kew Gardens. The beauties of Richmond Hill attract on the one hand, as do the botanical treasures of Kew Gardens on the other, whilst the silvery Thames flows so majestically along on the margin, enticing all lovers of aquatic life to disport themselves on its waters. All R.H.S. Fellows' and privilege tickets admit free to the Show on each of the days of the Exhibition, the 27th and 28th of June, and a great luncheon has been arranged to which all members of the Committees will be invited. Of course the respective Committees will sit as usual, and it is hoped find ample work furnished them. This gathering will not take the place of any of the Drill Hall meetings, but will rather be an extra; the conditions, however, under which it will be held should make it to resemble rather an enjoyable holiday outing than one of the stereotyped character. With fine weather the gathering should be a great success.—WANDERER.

The War and Cape Fruit.—"Tis an ill wind that blows no one good," and if, as it is said, there is a likelihood that, in consequence of quantities of Grapes and Peaches being held back at the Cape for the use of the wounded soldiers, the supplies of these two fruits will fall below the average, it will be good news for home growers. It is expected, says the "Rural World," that there will be a run on late English grown Grapes, and, moreover, that the prices asked and obtained will be uncommonly high. Should this be so, it will in a small measure be some recompense for the comparatively low prices to be obtained for home-grown produce when foreign supplies are plentiful.

Croton inimitabilis.—This Croton is so intensely brilliant in colour as to call forth admiration from anyone seeing a well-grown specimen. Not so vigorous a grower as that well-tried sort Queen Victoria, it makes a choice exhibition specimen, and far surpasses it in the rich glowing crimson shades of its foliage. We have at the present time such wonderful variety amongst these charming foliage plants that it is almost a matter of wonder that so few varieties figure at our exhibitions as specimen plants. To those who can accommodate and grow specimen plants the idea might well be considered with much benefit to themselves and a great gain to the public at large. The above-mentioned variety will most certainly count to any exhibitor.—R. P.

Ipswich Gardeners' Association.—A public meeting of those interested in horticulture was held in the Ipswich Town Hall on the 15th inst. to consider the suggestion made by Mr. Close at the annual meeting of the Horticultural Society, that a mutual improvement society be formed. There was a large attendance, most of the local nurserymen and gardeners being present. The proposition to form a society, to be known as the Ipswich and District Gardeners' and Amateurs' Mutual Improvement Association, was carried unanimously. A committee of nine, consisting of three each, nurserymen, gardeners, and amateurs, was appointed to frame rules and regulations. Mr. W. E. Close, Holy Wells Garden, was unanimously elected Hon. Sec. Forty-seven gave in their names as members at the close of the meeting.

The Sale of Poisons.—At a meeting recently held in Scotland, Mr. M. Cuthbertson, nurseryman, of Rothesay, asked the Lord Advocate if he would be prepared to support a Bill in Parliament making it legal for seedsmen and other agents to sell poisonous preparations such as sheep-dips, insecticides, and weed-killers. In reply, the Lord Advocate said that where poisonous substances were dealt with in the way of being dispensed, it was quite right that should only be allowed to be done by qualified persons. But in his view, where they did not need to be dispensed and were supplied by the manufacturer in the final form in which they were to be applied, he did not see that a trade or profession should have a monopoly of selling them, provided proper regulations were made and precautions taken that they would not be supplied or used for any other purpose than those for which they were meant.—("Gardeners' Chronicle.")

Liverpool Horticultural Association.—The annual dinner and social evening in connection with the above Association has become quite an institution, and from a social, as well as a gardening point of view, was again highly successful. A few old faces were absent, but younger members were there to fill their places, and to get a glimpse of friends meeting, as gardeners can when on pleasure bent. W. Fletcher Rogers, Esq., was Chairman, and right well he acquitted himself. Mr. T. Foster, Chairman of the Association, looked beaming, as, indeed, he well might at being able to bring together a force of 130. Mr. Mercer was here, there, and everywhere; Mr. Blackmore busied himself with subscriptions, and Mr. Harold Sadler, the courteous Secretary, gave everyone a kindly greeting. The loyal toasts were never more heartily proposed and responded to, and the collection for "The Absent Minded Beggars' wives and children, notwithstanding the many other funds for the same purpose at present in the city, realised £3 3s. 3d. The musical programme was of the usual excellence, and the conviviality of all present was greatly enhanced by the gift of cigars by Messrs. R. P. Ker & Sons, who were represented by Messrs. R. P. Ker, A. W. Ker, B. W. Ker, F. Ker, and Mr. Ranger. Messrs. Rowlands were also present, as were Messrs. Wilson (T. Davies & Co., Wavertree), Finnigan (Mr. H. Middlehurst's), Smith, of Birkenhead, and others. The votes of thanks to Chairman and artistes closed a most pleasant evening.—R. P. R.

Death of Mr. John Nunns.—We regret to announce the death of Mr. John Nunns, who passed away at Wimbledon on the 15th inst. at the age of seventy-one. He had retired from the profession for some years, but was for twenty-six years head gardener to Sir J. D. Llewellyn, Bart., at Penllergare, near Swansea.

Watering in Winter.—In the *Journal of Horticulture* of January the 4th I read the notes by "J." on Winter Watering of Plants. I would make particular reference to watering plants more or less dry on the surface. My present charge consists of a number of houses of plants to water every morning, and I start work each morning at seven o'clock when it is not too clear to see if a plant is dry or damp by looking at the surface. A sure way of knowing what plants require is sharply rapping each pot with the knuckles, as a clear ringing sound invariably indicates a want of water. I have frequently found plants damp on the surface and yet dry at the centre. There are many plants that only require just sufficient to keep them alive in winter. Watering is an art which should be thoroughly studied, as it has a very material effect on success in plant growing.—BALLYDRAIN.

Select Cactus Dahlias.—At the recent annual meeting of the National Dahlia Society the members selected the following as amongst the best Cactus Dahlias:—Alfred Vasey, Arachne, Beatrice, Bridesmaid, Britannia, Capstan, Casilda, Charles Woodbridge, Cinderella, Countess of Gosford, Countess of Lonsdale, Cycle, Ebony, Ethel, E. J. Deal, Falka, Fantasy, Fusilier, Green's White, Harmony, Harry Stredwick, Innovation, Island Queen, J. F. Hudson, Keynes' White, Lady Penzance, Laverstock Beauty, Lincius, Madame M. Henson, Magnificent, Major Weston, Mary Service. Mr. E. Welsh, Mrs. Barnes Mrs. Carter Page, Mrs. John Goddard, Mrs. Leopold, Mrs. Saunders Seymour, Mrs. Wilson Noble, Night, Ranji, Regulus, Starfish, Stella, The Clown, Tillie, Uncle Tom, Viscountess Sherbrooke, W. Treseder, and Zephyr. The sixteen varieties certificated by the Society in 1899 are recommended as deserving a place among the best, and will be included in the Society's list.

The Weather in 1899 at Belvoir Castle, Grantham.—The prevailing direction of the wind was west on 107 days. The total rainfall was 22.64 inches; this fell on 172 days, and is 4.22 inches below the average for a year. The greatest daily fall was 0.98 inch on October 1st. March and August were the driest months, May and October the wettest. Barometer (corrected and reduced): highest reading 30.761 inches on January 26th at 9 A.M.; lowest reading 28.355 inches on December 29th at 9 P.M. Thermometers: highest in the shade (Stevenson screen) 87° on August 25th; lowest 11° December 14th. Mean of daily maxima 56.16°; mean of daily minima 40.62°. Mean temperature of the year 48.39°. Lowest on the grass 8° on December 14th; highest in the sun 139° on July 19th. Mean temperature of the earth at 3 feet below the surface 49.49°. Total sunshine 1752 hours 30 minutes. There were fifty-six sunless days. The total sunshine is the most recorded since the instrument was erected in 1894. The mean temperature of the year is the same as it was in 1897.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Jan. 1890.										
Sunday 14	S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday 15	S.S.E.	31.5	30.0	40.2	28.4	0.04	36.1	40.4	44.3	16.8
Tuesday 16	W.S.W.	40.6	39.9	40.7	30.0	0.21	35.7	39.9	44.2	23.5
Wed'sday 17	E.S.E.	40.6	40.2	46.1	35.8	0.38	35.6	39.6	44.1	29.9
Thursday 18	W.N.W.	41.9	41.9	50.3	35.8	0.05	36.9	39.6	43.8	26.9
Friday .. 19	W.S.W.	38.5	35.4	45.2	36.1	—	37.5	40.1	43.7	28.3
Saturday 20	W.S.W.	36.4	36.0	48.9	28.4	0.19	36.5	40.1	43.6	25.5
		40.8	40.5	43.9	36.3	—	39.1	40.1	43.5	27.6
MEANS ..		38.6	37.7	45.0	33.0	Total 0.87	36.8	40.0	43.9	25.5

On the whole the weather has been dull with brief intervals of bright sunshine. Rain fell on five days. There was a dense smoky fog on the evening of the 20th inst.

BRACEBRIDGE MANSE.

SOME weeks ago when penning a few notes relative to Doddington Hall, for the pages of the *Journal of Horticulture*, a promise was made that some reference to the Rev C. C. Ellison's gardens at The Manse, Bracebridge, should be given, and that promise is about to be fulfilled. It is no light task to undertake, for the garden is by no means orthodox either in its style of formation or in its present-day maintenance. On every hand, though the space is comparatively limited, there are evidences of an original mind whose conceptions are unique, and are carried out with a boldness that is strikingly characteristic of the source from whence it sprung. A generation ago there was a flat meadow; now there is a garden of which it would be an impossibility to find an exact counterpart within the confines of the British Isles. It is like nothing but itself, and is testimony to the energy of its owner and originator, the Rev. C. C. Ellison.

It was between thirty and forty years ago that the task was commenced to turn the flat field into an interesting garden, for it was about that period when its owner was severely bitten with a desire to "garden." And he has been gardening ever since. True, there have been days, perhaps months, when a slackening has come, but it has only proved a time of rest which brought in its wake renewed vigour and activity with fresh ideas and improved principles. There has always been even in those days of repose a deep-seated love for gardens and gardening, and if Mr. Ellison could be induced to tell in writing of the joys and sorrows that beset the path of the enthusiastic amateur they would bring pleasure to every reader of our Journal. He is a scholar, a brilliant *raconteur*, and one who has a happy knack of conveying information in the best possible style—that which interests and amuses as well as instructs.

The Manse garden is practically divided into two distinct sections, one for fruits and the other for Roses, and it would be difficult to say which portion is the better. I need not attempt to decide, but can safely leave the one in the hands of fruit men, and the other to the partisans of the queen of flowers. Then, too, there are borders of old-world flowers, as well as a pond in which some of the choicer Water Lilies have got to thrive. This is surrounded by flowering and foliage trees, and, small though it is, it presents more than one view which could not fail to charm the lover of Nature's beauty. Here we have the serpentine walk, while anon we enter the Palace of Truth, and later pass through St. George's Channel; not the one that cuts England's shores from those of Ireland, but a creation of Mr. Ellison's that affords a pleasant shade on the hottest of summer days.

The serpentine or snake walk is admirably named, for it takes the traveller by devious ways through the Rose garden to the fruit quarters. Not only does it wind "in and out and round about," but goes up and down dales on which lives a family of Roses comprising some 3000 members. The plants have not all the same aspects, but are placed where it is found they flourish best. Some varieties are represented by considerable colonies, and others by lesser numbers, but almost the whole of them are healthy and clean, while several make really luxuriant growth. None can imagine the beauty of one of the Rose gardens, and those who have seen it in its most attractive

garb do not care to set themselves down to work out such a task as an accurate description. Standing at one point in the snake walk the ground clothed in Roses falls gently beneath one's feet and rises and falls to the centre, whence a bolder ascent commences and carries the eye to a grand Yew hedge and to trees above with the country beyond; it is an ideal position for this most popular of flowers.

The rosarians may here cry out for names of varieties, but at this the line must be drawn, or the available space would be swallowed ere the fruit was reached. Suffice it to say that numberless varieties have been tried, and those that succeeded best are retained, but the failures—well they find a resting place in a less congenial spot. In only one respect, so far as I observed, is Mr. Ellison what might be termed a severe man. This is when he discovers a speck of mildew

or a lone and solitary green fly on his Roses. Then severity is scarcely the word; it should be death, for the enemy is attacked with such determination that even Mr. Raillem's advice given in these pages, when speaking of flowers of sulphur for mildew, to "rub it in" is none too strong. The sulphur steps in and the mildew rushes out. Green flies may not be dealt with in precisely the same way, but an equally efficacious course is adopted. Mr. Ellison evidently believes in getting home a heavy blow at the outset of the battle.

As we continue our march of progress we reach the aforesaid Palace of Truth, which is in reality a charmingly embowered seat, where occasional meetings of gardening enthusiasts take place. Needless to say with such a conclave conversation waxes warm, and, as our guide put it, stories are told. The seat and surroundings could many a tale unfold were they endowed with speech, and the horticultural world would be the wiser for the knowledge. Striking hence by another path we traverse St. George's Channel, which is so named from the fact that on one side are English while on the other are Irish Yews. Stormy passages through the *real* channel are of comparatively frequent occurrence, but we can answer for our journey by Mr. Ellison's route being essentially pleasant and peaceful. But we must press on or we shall fail to reach the all-important fruit trees, of which their owner is justifiably proud.

The quarters containing the fruit are of some considerable extent, and include amongst the 1500 or so of trees babies only just planted to middle-aged

specimens of thirty years or rather more. The juveniles are certainly pictures of health and sturdy vigour, as are many of the older trees. Some, however, are by no means attractive, as they illustrate to demonstration the effects of canker, and it is of those that Mr. Ellison is most proud. It may be taken as probable that the fact of almost all his trees being attacked by this insidious enemy was the cause of our host's first lapse into inactivity or lethargy. He feared that all hope of success was gone, and was consequently in despair. Some good friend, however, advised an attack on the canker, and the very idea was sufficient to stir the latent energy into life. The result of this was that the saw and knife came to the fore, as well as boiled oil and Stockholm tar, which, in addition to attention to the roots, very quickly made their presence felt for the better. The wounds after cutting and dressing grew over, and the trees took on a renewed lease of life.

Tree after tree was examined, and though remains of canker could be seen, the active disease was a thing of the past. If it recur on

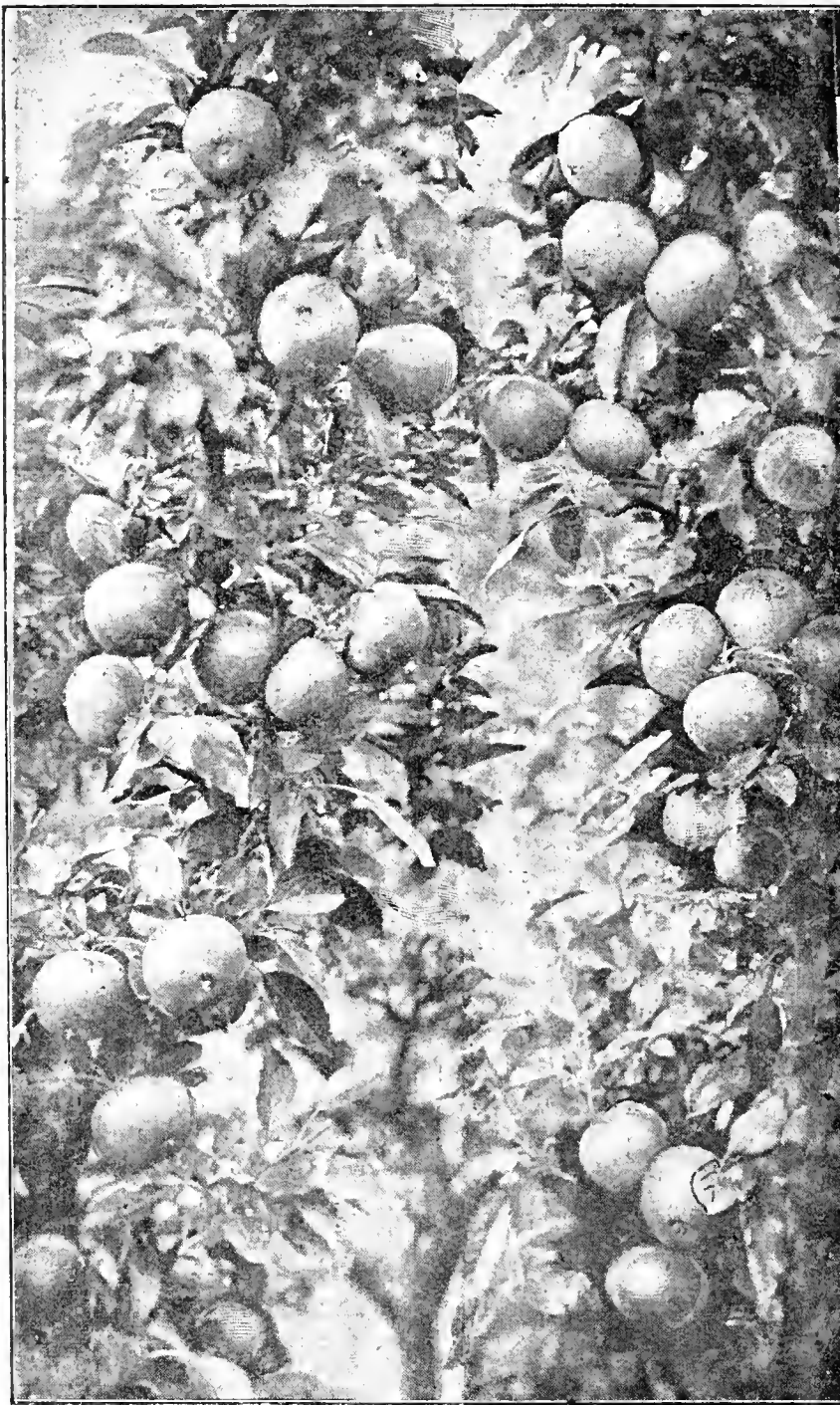


FIG. 15.—APPLE COX'S ORANGE PIPPIN AT BRACEBRIDGE.

any tree the remedies are applied with care and promptitude, and with invariable good results. Hence it is that scores of Apple trees, which were condemned to death by fire, are now thriving, and producing regular crops of sound fruits. Let those persons, however, who would

be desired than are there to be seen for the asking. The collection, particularly of Apples, is most excellent, and many are the grand specimens of individual varieties that are produced. Glance at the photographic illustration (fig. 15) and a glimpse of a couple of branches



FIG. 16.—ABUTILONS.

emulate Mr. Ellison remember that the roots receive consideration in a rational way as well as the branches. We might advise these who are not believers in pinching to steer clear of *Bracebridge Mansie*, or they will have the wind completely taken out of their sails inside fifteen minutes. Certainly no better examples of its advantages could

of Cox's Orange Pippin will be seen that may be taken as typical of scores of other trees in the garden.

Though the trees are mainly of bush form, there are representatives of other shapes, as well as some beautiful examples of training on

the walls. The trees are young, it is true, but we hope that as they attain to years of maturity they will prove to "A. N. O." that the art of fruit tree training has not quite passed to an untimely grave. We had a peep into the fruit room, and found it splendidly stocked with handsome produce, most of which will probably ere now have gone the way of all good fruit. Besides the Apples, Pears, Plums, and Damsons there are the small fruits; but we must pass these over with the simple assurance that they are well worthy to rank with their larger *confrères*, to which more specific attention has been given in these notes.

Many persons will think that no ordinary man could have much spare time when such attention is devoted to the garden, particularly when it is remembered that there are other duties which are even more important. Not only, however, do these matters have attention, but Mr. Ellison has another hobby—namely, carving. This is done with lathes that are quite perfect, and the ivory that has been worked proves the evidence of a master hand; indeed, Mr. Ellison is acknowledged as one of the foremost carvers in England, whose work is much sought at exhibitions of this nature. Unfortunately it is beyond our scope to describe either the man, the carving work, or the machines, so we must leave Mr. Ellison to his hobbies, while expressing gratification at the visit that was paid at the close of last summer. —H. J. WRIGHT.

FLOWERING PLANTS FROM SEED.

ABUTILONS.

A GOOD strain of Abutilon seed will produce plants that will give flowers in the several colours of crimson, yellow, red, and white. The drooping, bell-shaped blooms (fig. 16, p. 75) are attractive on the plants, and can be used for cutting, as the flower stems are usually of a sufficient length for utilisation in glasses. Seeds may be sown in February in brisk heat. When the seedlings are large enough pot them singly in a compost of loam, peat, and sand, growing them in a moist atmosphere until they attain a fair size. It is desirable to top the shoots a few times so as to make the plants bushy, which improves their appearance and renders them more floriferous. As the plants become well established give them greenhouse treatment in an airy, sunny position, always affording water before the plants suffer, as they are rather impatient of moisture. If the plants grow too tall they may be reduced by cutting down in spring. When the shoots break into growth repot the plants. Varieties it is desirable to retain may be propagated from cuttings which root in a compost of light rich soil in a moist temperature of 65° in spring. One of the best old named varieties is *Boule de Nègre*, and this is chiefly perpetuated by cuttings. The flowers are white with yellow stamens.

ANTIRRHINUMS.

Antirrhinums, commonly known as Snapdragons, are hardy perennials which can easily be raised from seeds in heat and flowered the ensuing summer. Formerly seeds were sown in autumn, or cuttings inserted, but this requires frame space in winter which can be better utilised. For producing very charming beds, either in separate or mixed colours, the Tom Thumb varieties are excellent. Some object to them because of their pigmy, dwarf, or formal character when in bloom, but they are nevertheless attractive, especially a mixed bed of various colours. The tall varieties are the best for borders, because the spikes are longer and more useful for cutting. In addition to these there are now intermediate varieties which are as beautiful as the others. Seeds may be sown in pans at the present time, and encouraged to germinate in heat. In a week or two after place them in a cooler place, eventually pricking out the small plants in boxes, from which they may be transferred to the beds or borders in May, 4 to 6 inches apart.

FIBROUS-ROOTED BEGONIAS.

These Begonias, when raised from seed early in the year, can be flowered outdoors in beds the same season. A bottom heat of 65° to 70° must be at command, and the seeds should be sown in pans filled with a mixture of loam, peat, leaf soil, and sand. Drain the pans thoroughly, and make the compost fine and level on the surface, giving a gentle watering. When drained sow the seeds thinly, and dredge over a very slight covering of white sand. Place on the pan a square of glass to prevent the moisture evaporating from the soil. On this lay paper to shade the seeds from light. No water ought to be necessary before the seed germinates, and when it is required it should not be given at the top, but stand the pot in water until moisture begins to percolate through the surface. It is best to remove the pan from the water as soon as the first drops of moisture are seen on the surface. The seedlings ought as soon as practicable to be transferred to fresh soil in well-drained boxes, still keeping them in heat and moisture. Lift them carefully from the seed pan with a flat notched stick, and place 2 inches apart in the boxes filled with similar compost to that employed for sowing the seed. When the plants are well established in the boxes and growing vigorously, they may be introduced to a cooler temperature, where they will gradually become inured to harder treatment for final planting out in June.—E. D. S.



ROSES UNDER GLASS.

THE month of January is a busy time with those who grow Roses under glass extensively, as the plants need pruning and the borders dressing. Those planted out are not generally forced very hard, as so much better results are obtained by letting them advance steadily to give blooms during April and May. The early supply of flowers being obtained from plants in pots, a good stock of these should be pruned at once and placed in a light structure where the temperature ranges between 55° and 65°. A vinery just started is an excellent place for them, as the moist atmosphere and gradually increasing temperature suit both Vines and Roses.

In pruning the Hybrid Perpetuals I like to cut them back to one or two eyes, leaving a few strong shoots longer at points where they are required to fill gaps. Notwithstanding much that has been written to the contrary, nearly everyone prefers a Rose of good size and pure or brilliant colour to a smaller bloom of any given variety, and to secure fine blooms hard pruning must be practised with nearly all varieties of H.P.'s. In regard to dwarf Teas less severe pruning may with advantage be practised, but I am no believer in the let-alone practice which some growers adopt. When this is followed the bushes become crowded with weak growths that give only flowers of moderate size, and the few really good blooms which are produced are borne on strong shoots which break from the old wood or are thrown up from the stools. With such varieties as *The Bride*, *Catherine Mermet*, *Ernest Metz*, *Grace Darling*, and *Madame Lambard* I cut away all weak growths, shorten strong shoots to three or four eyes, and moderately strong ones to one or two. When this practice is followed nearly every bud which bursts brings a splendid flower, and from a commercial point of view one good bloom is worth two or three smaller ones.

After pruning a little of the surface soil should be removed, a dressing of some good chemical fertiliser given, this to be covered with a layer of sound loam enriched with fresh horse manure or dried cow manure. But I pin my faith principally on chemical manures for Roses in pots, as nothing seems to bring out such vivid colour in the blooms. In pruning climbing Roses which are planted in borders and trained to the roof of a house or other trellis, evidently different treatment is necessary, as such plants grow very strongly and flower splendidly on long shoots which are thoroughly ripened. Take for instance *Maréchal Niel*, at this season little if any pruning is needed; that operation should have been performed shortly after the blooms were cut last season. If the worn-out shoots were then cut away, to make room for the strong growths just starting, the trellis should now be covered with hard firm shoots, ripe almost to the points, and only the unripened parts need cutting away now. This fine Rose often produces a number of short, wiry looking shoots near spurs, or from the old wood, and such I find generally bear blooms of good size and fine colour. Climbing *Niphetos* and climbing *Devoniensis* are both very strong growers, and if the shoots are freely thinned during summer such growths ought to be thoroughly hard and ripe throughout the greater part of their length, and only need shortening back to hard wood.

But on the other hand, it is quite useless to have long green-looking shoots, as they only produce weak growths instead of flowers. The plan to follow therefore is—leave as much ripe wood as can be kept without undue crowding; cut away the remainder. When a large amount of space is covered by old trees, they succeed well by spurring the shoots in closely, and cutting some of the worn-out ones away each year, to be replaced by strong breaks.

Cheshunt Hybrid and *Reine Marie Henriette* flower splendidly on long, strong shoots, provided they are hard and ripe. Training thinly during the summer is, of course, the way to secure such growths. Unripened points must be cut away, and weak shoots pruned in closely. Young plants of *W. Allen Richardson* flower well on long shoots of the previous year's growth, and after flowering numbers of moderately strong growths break from them. These flower at the points later in the season, and from almost every joint the following year. After that I like to remove a few of such two-year-old branches annually to make room for young ones. Two old favourites, *Belle Lyonnaise* and *Gloire de Dijon*, flower well either when treated on the long shoot or spur system of pruning, but when grown as climbers I prefer the former method, as the space can be kept evenly furnished with shoots of almost equal vigour. Other varieties have their special characteristics, and need treating according to the lessons taught by close observation; indeed pruning of all descriptions.

cannot be successfully performed under various conditions, except by those who study the matter and act upon the experience thus gained.

After pruning Roses which are planted out the border should receive some attention, and if roots are plentiful—as they ought to be—remove a little of the surface soil, dress with chemical manure, then add a thin layer of loam and a coating of manure, if the position is one in which the latter will not be objectionable in appearance; should it be so place the manure on first and cover with soil.

Trees which are not thriving satisfactorily ought to have some of the soil removed, and good loam with a third of manure and a little soot added, substituted for the old soil. As long as one finds the borders packed with roots, an annual top-dressing and liberal feeding will secure good results; but whenever roots are scarce and the soil sour, the golden rule to observe is—remove and replace it by sound sweet compost. After the borders have been thus dealt with, and the soil has been found fairly dry, water thoroughly with tepid water, but when the soil is wet, or roots not plentiful, defer watering for a time. —ROSARIAN.

COMMERCIAL GARDENING,—No. 2.

A CATCH CROP—FRENCH BEANS.

IN the early spring days Cucumber growing is found very expensive, on account of the large quantity of fuel burnt to keep up sufficient heat. When, a few years ago, the price of early Cucumbers fell from 12s. to 6s. a dozen, growers had to look round and see what they could grow in the houses to help to pay for the fuel. The catch crop grown in the small (12 feet) Cucumber houses must be one that will not take up much room, and will come to maturity early; and nothing has been found more suitable for this purpose than French Beans.

WHEN TO SOW.

The Bean seed should be sown a fortnight after the Cucumber seed, in shallow boxes, those used for Tomato seeds and Chrysanthemum cuttings being the kind frequently employed. In case any readers do not know the sort referred to, it may be said they are about 7 inches wide, 12 inches in length, and 1½ inch deep. These boxes each hold forty beans. The soil used for sowing is any ordinary soil, that in which Chrysanthemums have been growing being very suitable. Be careful, however, not to use any that may contain any pest or disease harmful to Cucumbers, for although our friend Mr. "A. D." may make light of our old enemy the eelworm, he would find it no easy matter to deal with if he were a market grower.

When the seeds are sown place the boxes in the house in which the Cucumbers are being raised. The seeds will, if given plenty of water, germinate very rapidly, and the boxes should be removed to a cooler situation as soon as the plants appear. The successful Bean grower always has dwarf sturdy young plants, and plants them out as soon as the first two leaves are half developed. The secret of a good crop of Beans is the planting out just at the time named.

PREPARING FOR PLANTING.

The Cucumber houses should be whitewashed and painted, and the soil put into heaps ready for the "Cue" plants. Most Cucumber houses have two flow pipes and two returns in each house. The former run along the back, and the latter are put more or less down the middle of the house, generally from 3 to 4 feet from the flow pipes. The Beans are planted in rows, one on each side of the return pipes. By this means we get four rows of Beans in each house.

Knowing now where the Beans are to be planted, a layer of manure should be spread along where the rows will come, and if a little basic slag and kainit is spread on the manure, the Beans and "Cues" will be all the better for it, and will repay the grower for his thoughtfulness. We generally spread about 3 lbs. of the former and 2 lbs. of the latter to every 100 feet of row. Dig in the manure, taking care to mix it well with the soil.

PLANTING.

The Beans should be ready to plant at the same time as the Cucumbers. Stretch a line along a foot or 15 inches from the pipes, and dib in the Beans 4 inches apart. Give them a good watering as soon as the planting is finished, and then only water when necessary. When the Beans are 6 inches in height put a few small stakes on each side, and a row of string to keep the plants from falling about.

As soon as they commence flowering give them a little weak stimulant in the form of liquid manure. The latter is not always available, but what is even better than this is a mixture of one part of nitrate of soda and two parts of superphosphate, 1 oz. in a gallon of water. Give alternate waterings, first with clear water and then with the liquid manure.

It is hoped none of your readers will be surprised at this recommendation of nitrate of soda for a leguminous plant. Writers of horticultural science may tell us that this class of plant can obtain its nitrogen from the atmosphere. The fact is not disputed, but we

cannot wait while the moving air brings sufficient of this food to our plants, so we give them nitrate at the root, and find it pays.

PICKING AND PACKING.

About a month from the time of planting the Beans will be ready for picking. Do not pick them too soon; but on the other hand, do not keep them too long. A little judgment is necessary. Some growers pack the Beans in boxes, which will hold about 6 lbs. each, but the majority put them in overhandle baskets. Line the baskets with paper, and as the Beans are picked lay them in neatly and evenly, cover with paper, and tie them down with plenty of raffia.

VARIETIES.

We have never grown more than the two following varieties of Dwarf Kidney Beans—viz., Ne Plus Ultra and Osborne's Forcing. There is not much to choose between these two, but if we had a casting vote we should give it in favour of the last named.

RETURN FOR OUTLAY.

Beans in the spring sell readily. In a mild winter they may not fetch more than 10d. per pound wholesale, but when other vegetables are scarce they will often sell from 1s. 6d. to 2s. 6d. per pound. We have managed to get from houses 100 feet long 100 lbs. of Beans, and our average price was 1s. per pound.—TOM SLOWMAN.

FRUIT TREE TRAINING.

It is evident that in some establishments the art of tree training is not strongly in evidence. It is very pleasing to see the whole space on walls closely covered with well-trained fruit trees laden with luscious fruit. Very often large empty spaces are noticeable, and trees may be seen cut so clumsily that large decaying snags are much in evidence; these eat into the permanent branches, and in due time are the forerunners of canker and death. Pruning should be done on every species of tree or shrub in a manner so that there is nothing left to do mischief. There should be no long sloping cuts, but manipulated with a twist close to the bud, which leaves nothing to die back, so that in the course of time (a season or two at most) the wounds are healed, and the bark has concealed the cut.

Such was the practice of the late Mr. Pitman, foreman in the grounds of the late Messrs. Osborn & Sons at Fulham Nurseries. Many practitioners of the art of tree raising at the present time claim to have been under Pitman, and received tuition from him. They may have been; but in some cases I have seen of late years the pupils had not been very apt disciples, as the trees passed through their hands are as unlike Pitman's as a Clydesdale horse is to a well cared for thoroughbred.

A mistake is very general, and that is the young growths are not trained into form as soon as they are made, but left to grow as they may; then such cannot be formed into handsome shoots. A well-managed shoot should be as clean and straight from the stem as a gun barrel. Such was Mr. Pitman's practice. I watched his work carefully while I was under him for nine months. I never see any trees like them now. If trees are not well started at first, they are always faulty afterwards.—M. TEMPLE, *Carron, N.B.*

STEM ROT OF CARNATIONS.

MESSRS. CHARD & ADAMS of the Rhode Island Experiment Station have been making quite extensive experiments in this little understood disease, which at the present time has perhaps more terrors for the American Carnation grower than any of the other numerous ills to which the plant is subject. The experiments were designed to show the influence of clean sand *versus* old sand for propagating vigorous as against diseased cuttings, and manure *versus* chemical fertilisers as influencing the prevalence of disease. Tests were also made of the use of Bordeaux mixture. The experiments were begun in the spring of 1899, some 1500 cuttings of the variety Flora Hill being used. A part of these were obtained from plants among which stem rot had been very prevalent, while the others were from healthy stock.

Although the experiments have not, says "Gardening" (America), progressed far enough to be regarded as conclusive, certain indications are pointed out as well worthy of note. The most marked is the great importance of using fresh sand for propagating, some of those propagated in old sand showing losses of over one-half from stem rot. It is unsafe to dip the cuttings in Bordeaux mixture, and no special benefits seem to result from it. The experiments do not show any increase of the disease in soil fertilised with stable manure.

One of the fungi causing the disease is thought to be the same as that causing the rot of sugar Beets and the damping-off in other plants. It would seem safer, therefore, to avoid soil in which Beets have been grown, and not to use sand in which cuttings of any kind have been rooted—that is, use a new clean sand for each stock of cuttings. The conclusions in regard to propagating sand are in accord with the practice of many of our best commercial growers, and should be heeded by all. It is to be hoped that these gentlemen may be able to continue and complete their experiments.



MRS. G. CARPENTER.

THIS is a valuable Chrysanthemum to grow for the supply of late pink blooms, a colour that is very scarce. The variety does not lend itself to a mass of bloom, as many of the side buds will not open; but a plant in a 9-inch pot will perfect a dozen or more charming flowers about 4 inches across as late as Christmas.—H.

CLINTON CHALFONT.

ON page 26 Mr. Molyneux mentions a white sport from this fine decorative variety. Many catalogues also quote white Clinton Chalfont. It does not seem to be known that Clinton Chalfont is a yellow sport from a white variety, J. H. White, and the apparent sport from the yellow is simply a reversion to the parent.—W. J. GODFREY.

YELLOW ETOILE DE LYON.

I HAVE before me a pure yellow sport of this one time favourite which gives promise of being valuable for late flowering. Like all other sports, the newcomer has the parental characteristics. Whether it will be as much sought after by exhibitors as its parent, time only will prove, but if it is cultivated only for the production of late flowers in quantity it will serve a useful purpose.—E. M.

J. CHAMBERLAIN.

THOSE who have not tried this crimson variety for late flowering should do so. The blooms hold their rich tint remarkably well quite up to Christmas, and the habit of the plant lends itself to a bushy specimen. We were more than pleased with it compared with the other best crimson sorts. It is a trifle small for exhibition purposes. This has caused many to regard the variety with less favour than it deserves for general culture.—S.

CRIMSON CARNOT.

CERTAINLY the note on page 6 of the Journal was enough to whet the appetite of all Chrysanthemum lovers. Yet after reading it one feels a bit sceptical. A crimson Carnot must be obtained as a sport to be the same as the parent, except colour, and we have not up to now heard of a crimson colour coming from either a white or a yellow.

A form resembling the charming type named may of course be raised from seed, but to call the same Crimson Carnot would be misleading. A variety already exists—Hon. W. F. D. Smith—which has been described by the high-sounding title that heads this note, but who that has grown it does not think the same a bit overdone? Another misleading instance is the variety named Red L. Canning. This was obtained from seed; not as a sport from the type. It somewhat resembles L. Canning, in being a dwarf grower, and is fairly late, but it should not have been awarded a first-class certificate because of that, as Red L. Canning. The new one at once gained a notoriety its merits did not deserve.—SCEPTIC.

SHOW SCHEDULES.

MR. E. MOLYNEUX takes exception (p. 26) to my advocacy of standard and pyramidal-trained Chrysanthemum plants. I am, however, not by any means alone in the opinion that their inclusion would relieve the monotony presented by an assemblage of the usual bush-trained plants, which require a host of inartistic stakes to bring them into shape. From an exhibitor's point of view no doubt the latter system is favoured, owing to the greater facility it has in affording a wide area for a more direct face of the blooms when staged, and also less trouble incurred in training the specimens into shape than that entailed by the systems advocated. Furthermore, I fail to see any more objection to Chrysanthemum plants grown as indicated than the almost mathematically trained specimen plants, such as Indian Azaleas, Ericas, Ixoras, Stephanotis, Allamandas, Apelexis, and a host of others, which form so great a feature at the principal flower shows.

Respecting "miscellaneous groups arranged for effect," I am fully cognisant that, in a general way, schedules allow the proviso that "ornamental foliage" and other plants may be introduced into Chrysanthemum groups, but what I intended to convey was the desirability of offering prizes for groups of plants, exclusive of Chrysanthemum or otherwise, according to the means or taste of the exhibitor.—W. G.

[Our contributor is still under a misapprehension. We may repeat that prizes are frequently offered for groups of miscellaneous flowering and foliage plants at Chrysanthemum shows from which the autumn queen is rigidly excluded.]

KINGSTON CHRYSANTHEMUM SOCIETY.

AT a recent fortnightly meeting of the Kingston Hill Gardeners' Improvement Society, Mr. Alexander Dean delivered an excellent paper on flower shows, which was listened to with interest by his audience. Mr. Dean afterwards introduced the subject of the Kingston Chrysanthemum Society—viz., was it desirable to continue that Society or substitute a summer exhibition in its place?

This produced an animated discussion from one or two of the Committee of this Society (who had been invited to attend the lecture), and also from several of the members of the Gardeners' Society, who have not as yet given any support to their Chrysanthemum loving brethren. The chief grievance seemed to be that the collector had not called on them all for subscriptions, which I hope will be remedied when another season comes round. A simple remedy for this evil would have been to have sent or taken their subscription.

A proposition to limit the exhibition to the boundaries of the Kingston poor law union found a good deal of favour amongst those present. In support of this it was urged that the large amount of money spent in the principal open classes in past years brought no appreciative return, either in competition or subscriptions. This, without doubt, is perfectly true, owing perhaps to the numerous shows now held on nearly the same dates, and also the fact that large growers usually take their best flowers where the prizes are most attractive.

One speaker in suggesting improvements in the Kingston schedule went in strongly for introducing classes for Chrysanthemums staged in vases, similar to those seen at the Aquarium and elsewhere. I should certainly agree with him, to include a class or two staged in vases, especially so in the amateur and cottagers' sections, which are too often neglected, in suitable classes for the display of their flowers.

It is questionable, however, if large classes for Japanese, at local exhibitions, draw the amount of competition that is expected of them. At Wimbledon, for instance, the chief class which was staged in vases drew one competitor; whilst at Putney a similar class brought two exhibitors. Single vases at Wimbledon, however, made a splendid show, nearly a dozen competing in one particular class, which clearly shows that whilst many can stage a few blooms it is only a limited number who show in the larger classes.

A great point in favour of long-stemmed flowers is their usefulness for home decoration after the show; whereas their shorter-legged brethren of the board are practically valueless, more especially the front row flowers. Classes for Violets were also mentioned, but these it appears have already been tried at Kingston without much success. A plant that has received much attention in the locality might well be honoured with recognition in the schedule—viz., the pink Begonia Gloire de Lorraine. A class for twelve or nine pots would make a striking and effective display, and, judging by its popularity in the district, a strong competition would be forthcoming.

The difficulty of securing a suitable building is also a vexed question, the Drill Hall being a large structure, although perhaps in past years it was small enough. The situation of the hall is also not exactly central, but, as Mr. Dean remarked, this probably does not affect the attendance to any extent. The re-introduction of Chrysanthemum groups would also tend to brighten and fill the sides of the hall, making separate and smaller groups for single-handed gardeners, who are another division of gardeners that too few classes are usually provided for, according to their means and advantages.

The Society, as it stands now (we were informed by the Chairman) is clear of debt, therefore any idea of its ceasing to exist should not be entertained, as, with a good working Committee and an energetic Secretary, surely the Kingston Show could be once more put on a firm basis.

Towards the close of the meeting Mr. A. Dean was proposed as successor to Mr. Elsam (who has lately resigned the secretaryship), but Mr. Dean firmly declined the honour, his time being fully occupied with other work. Perhaps a more fitting occasion to nominate a Secretary would be at the annual general meeting of the members of the Kingston and Surbiton Chrysanthemum Society.—EXHIBITOR.

AQUILEGIA PYRENAICA. — An excellent article on page 32 gave a very interesting account of the larger number of the Aquilegias or Columbines. One charming species not mentioned in that article, and which is particularly suitable for small rock gardens, is *A. pyrenaica*, a small and graceful-looking Columbine from the Pyrenees. It seldom attains to a height of more than a foot, and is commonly seen dwarfer. It has finely cut leaves, and handsome deep blue flowers, which open from May to June. It grows well in sandy peat; but, although it likes ample drainage, does not do well in a very dry soil. Some plants I have on a rather dry rockery have bloomed and grown in a less satisfactory way than those on another which had moister soil. This Pyrenean Columbine is not a new occupant of our gardens, as it was introduced in the year 1818. It may be increased by division, but it is also easily raised from seeds.—S. A.

APPLE STANWAY SEEDLING.

THE new Apples that were shown before the Fruit and Vegetable Committee of the Royal Horticultural Society during 1899, and which were recommended for the award of merit, were exceptionally numerous. At several successive meetings varieties were honoured in the direction indicated, and one—Chas. Ross—was considered so meritorious as to be deserving of a first-class certificate. The last variety to receive an award of merit was Stanway Seedling (fig. 17), which was exhibited on December 19th, 1899, by Mr. T. Kettle of Colchester. As our illustration clearly shows, this Apple, which is decidedly over medium size, is of handsome conical form, tapering towards the apex, and of uniform clear yellow colour except in the cavity of the stalk which is bright green. The eye is small and closed, and is set on one side of the axis. The tube is conical, and the stamens median. The stalk is very short and deeply inserted in a cavity which has a small, fleshy protuberance on one side. Stanway Seedling is a culinary Apple of much promise for use at Christmas.

HORTICULTURAL EXAMINATIONS.

IN considering the examinations in their more general application, it may not be possible to formulate an opinion so readily as in the two cases to which reference has been made, but I fear there will be some difficulty in arriving at a conclusion other than to the effect that the results have fallen short of expectations. If they are intended to show that the holder of a certificate is well qualified to undertake the responsibility of a garden they have unquestionably failed. For this purpose the certificate of the first-class is of little service to the holder. The certificate shows, of course, that the holder had a sufficient acquaintance with theoretical matters to pass the examination to the satisfaction of the examiners; but to a man who has obtained a position in the garden, a distinction which can be obtained by a youth or a girl in her teens can be of little if any use to him. If it be said that the examinations are only intended for testing the knowledge of many people, let it be so stated, and the examinations be described as elementary. The questions are by no means of an elementary character, and it passes my comprehension how a youth of sixteen or seventeen, or a miss in her teens, should obtain nearly full marks in dealing with such a paper as that set at the last examination. Sixteen questions were given, and of these one half had to be answered in two and a half hours. I have selected eight as fairly representative of the paper, and these are as follows:—

What differences exist between the manner and places where rootlets arise from roots, and branches from stems? Of what use are branches, and what trees have none?

Give any instances of failures, and state your opinion as to their causes, in crossing distinct species. What are the general characteristics of hybrids?

Describe the flower of the Pea, of a Primrose, of a Salvia, and of any Orchid, and explain how they are adapted to insect pollination.

What are the injurious effects of (1) too much water; of (2) too great a heat; and of (3) excessive drought, upon plants?

Is it possible to obtain a supply of Roses all the year round from an English garden? Describe their propagation and culture under glass and in the open ground.

What are the most useful fruit trees* to grow under glass? Describe the best form of glass structure for the purpose, and the method of culture.

How would you proceed to obtain a succession of garden Peas and Dwarf Kidney Beans? Can they be obtained all the year round? If so, how?

What is the best aspect for a flower garden? How would you proceed to lay it out and stock it?

To answer these eight questions fully and accurately in the time allotted in a manner to justify the examiners regarding a considerable number of the papers as closely approaching perfection indicates a degree of ability on the part of the candidates that is at least surprising. I know something from practical experience of University and other examinations, and as I run my eye down the paper of questions and then turn to the class list I cannot restrain a feeling that there has been decided liberality in assigning the marks.

The class lists show, as might, of course, have been expected, that those who had the assistance of experienced teachers have been the most successful. In other words, the students attending the various colleges and schools in which horticulture is taught greatly predominate in the first class. I refer to this point for the purpose of stating that in the preparation of candidates the experienced teacher will constantly keep in view those points which are likely to tell in dealing with a paper of questions, rather than to concentrating his attention

upon grounding his students in the technicalities of the art. It is, I am prepared to admit, extremely difficult to avoid some amount of cramming in connection with horticultural as with other examinations, but it should, as far as possible, be discouraged. If we are to improve the educational status of gardeners we must teach them gardening rather than how to pass examinations in gardening, and unless we do that we had better return to the state of things that existed before the examinations were instituted.

Much might be accomplished in improving the existing state of things were we to more clearly understand the conditions under which gardeners are the most efficiently trained. I am not prepared to say that gardening cannot be efficiently taught in properly equipped schools, but I have no hesitation in stating that the best possible schools for the training of young gardeners are private gardens and nurseries. In these the young gardener not only obtains a training in the technicalities of the art, but is braced up, so to speak, by the influences that are brought to bear upon him, to engage with greater efficiency in the battle of life. I have for a long series of years constantly advised gardeners to take every possible advantage of their

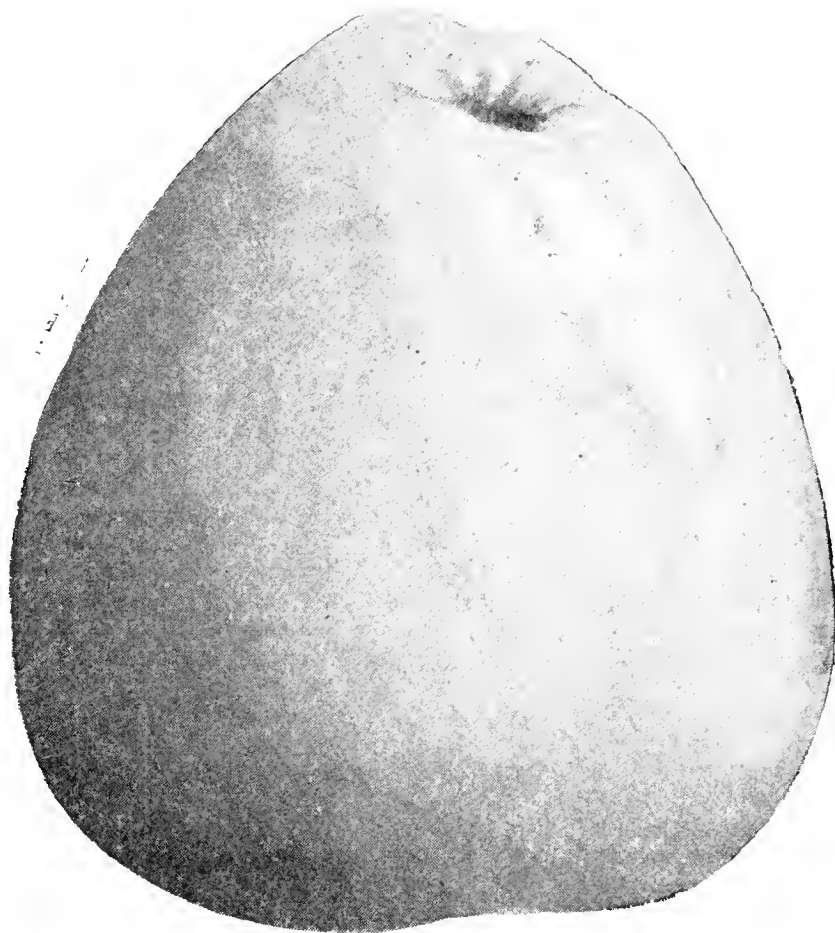


FIG. 17.—APPLE STANWAY SEEDLING.

opportunities for the acquisition of a knowledge of principles as well as practice. I have, with equal persistency, advocated that this knowledge should be acquired in conjunction with practical work. In my opinion, therefore, the scheme under which examinations are held should be so framed as to encourage them to do this.

With a view to the attainment of this end I would suggest that the scheme should recognise three distinct grades of students, and include practical work in two of them. There should be the elementary examination, which might be conducted on much the same lines as now, without any restriction as to the eligibility of candidates. Then should follow the advanced examination in which practical work should have due prominence, and for this those only should be eligible who have had at least five years' experience in private, public, or market gardens, or nurseries, and have obtained a first-class certificate in the elementary examination. Following the advanced should be the honours examination, in which a candidate should, in addition to a paper examination, be required to show his proficiency in practical work, and also to show his ability in giving directions to the garden labourers for carrying out the details of garden work. Candidates for this examination should have had seven years' experience in gardens or nurseries or in both, and have obtained a first-class in the advanced stage.

A scheme such as I have thus briefly sketched would require careful preparation and involve some amount of difficulty in carrying it out, but the prospective difficulty does not appear to me to be sufficient to deter the responsible authorities from grappling with the question and endeavouring to formulate a scheme which will greatly improve the existing state of things and make the examination worthy of a country in which the practice of horticulture has attained to a higher degree of eminence than in any other part of the world.—(Conclusion of a paper read by Mr. GEO. GORDON, V.M.H., at a meeting of the Horticultural Club.)

* The word is intended to exclude Vines.

DEATH OF MR. JOHN FRASER, V.M.H.

MANY of our readers who have enjoyed the acquaintance of Mr. John Fraser will regret to learn of his death, which occurred on the 20th inst., at Woodford, Essex. Mr. Fraser was one of the best known of metropolitan nurserymen and valuers of nursery stock. He was a man of great ability and trusted integrity, while the genial nature of his disposition rendered him highly popular. In years gone by he was a famous plantsman, and one of the best exponents of the culture of hardwooded plants in the kingdom. Such specimens as he grew are now about extinct, and could only have been produced by more patience than appears to be general nowadays, and the greatest cultural skill.

For several years his chief nursery was on the borders of Epping Forest. For some time we believe it has been under the management of his son. It is famed for hardy trees and shrubs, and has been one of the chief sources of supply for several of the London parks. Of late years the deceased gentleman's services were in great demand as a valuer, for which his experience admirably fitted him, and his uprightness was proverbial.

He was also for a long time a leading spirit in many public functions connected with horticulture, and few men could speak more appropriately and effectively on the subjects that might be under consideration. Mr. Fraser has for years been a most useful man in the horticultural world. His unassuming manner and readiness to do what he could for any worthy object rendered him a general favourite, and his memory will be cherished by a large circle of friends. He was an old member of the Floral Committee, and by this body a vote of condolence was passed at the last meeting with the family on the loss of its estimable head. Mr. Fraser was seventy-eight years of age.

A SWEET PEA FESTIVAL.

FEW persons interested in gardening will venture to dispute the popularity of Sweet Peas, or to question their right to hold a position in the front rank of garden flowers. They have a beauty, a grace and a charm that are peculiarly their own, and when to those most desirable attributes is added a delicious fragrance we find a combination of virtues that is not to be commonly found amongst plants. Little wonder then that they have grown in general favour, and are yearly becoming more and more appreciated, especially for various decorative purposes to which they are so admirably adapted. Not only are Sweet Peas held in high esteem by professional gardeners but also by every amateur horticulturist in the country, while the rural cottage garden that has not its one or more rows is a striking exception to the general rule. The natural result of this extraordinary popularity has been that varieties have during the past two decades multiplied enormously, and unfortunately many of them show scarcely any perceptible difference from numbers of others. This is most regrettable and calls for reform.

To meet this evident want, and with a view to reducing order out of chaos, it has been decided to hold at the Crystal Palace this year an exhibition of Sweet Peas. The occasion of having so many varieties in the very best of condition exhibited at one and the same time will be seized to classify the varieties, for which purpose a representative committee of experts will be selected. These gentlemen will bring their knowledge to bear on the flowers, and the result of their efforts will most certainly be for the general good. But it has been decided to go further than this and to have a conference during the show, when papers will be read which will treat of the plant from various stand-points, and these alone will form a valuable addition to horticultural literature.

The reason this particular year was chosen lies in the fact that it is the bi-centenary of the introduction of the Sweet Pea into Great Britain, and, therefore, no better time could be chosen for the celebration. A Committee has been formed of those interested in the movement, and Mr. Richard Dean, V.M.H., Ranelagh Road, Ealing, has consented to act as Hon. Secretary and Treasurer. The first meeting of the Executive Committee was held at the Horticultural Club, Hotel Windsor, on Friday last, and we subjoin an official report of the proceedings.

The first General Committee meeting in connection with the Bicentenary Celebration of the Sweet Pea was held, by kind permission, in the Horticultural Club Room, Hotel Windsor, on Friday, January 19th, when Mr. George Gordon, V.M.H., presided over a very representative gathering.

Business being the purpose of the meeting no time was lost in speechifying. The Chairman briefly alluded to the desire expressed in 1899 by leading amateurs, nurserymen, seedsmen, and market growers that a comprehensive exhibition of Sweet Peas should be held during 1900, together with a conference, one duty of which should be the classification and selection of varieties. This desire led to a meeting in Edinburgh in September last, when Mr. Gordon (Chairman), Mr. H. J. Jones, and Mr. R. Dean (Secretary) were elected as a preliminary

committee to draw up a scheme for the celebration and submit it as early as possible to the General Committee. After this brief and formal statement, the Chairman requested the Secretary (Mr. R. Dean, V.M.H.) to read the letters received from the Crystal Palace Company and the Royal Aquarium Company. The former offered to accommodate the exhibition, provide the necessary conveniences for a conference meeting, and subscribe £20 to the prize fund. This being the best offer, it was agreed, on the proposal of Messrs. H. A. Needs and H. J. Wright, that the Bicentenary Celebration be held at the Crystal Palace, Sydenham, on July 20th and 21st, 1900, or as near those dates as could be conveniently arranged without clashing with other exhibitions.

Having settled the place and date of celebration as far as possible, the next point for discussion was the schedule of prizes, of which a preliminary draft had previously been communicated to the Vice-President and Committee. Before the discussion of classes and prizes a list of subscriptions received and promised up to date was submitted by the Secretary, amounting to nearly £90. As the whole of the subscriptions received were unsolicited, the Committee felt that the success of the undertaking was practically assured, believing that those interested in the most beautiful, useful, and fragrant of annual flowers, the Sweet Pea, would not fail to show their practical sympathy with the Committee's efforts as soon as affairs had received definite form. The schedule is a comprehensive one of twenty-eight classes, each with four, and some with five prizes, offered on a most liberal scale. Class by class the schedule was discussed, and numerous minor alterations made. Nineteen open classes are provided for cut blooms, all to be shown in vases, these including classes for forty-eight, thirty-six, and eighteen bunches, and thirteen classes for one bunch of a specified colour or colours. Four classes are limited to amateurs employing either one or no regular gardener, and then there is a division, open to all, consisting of five classes instituted for the purpose of demonstrating the value of Sweet Peas in all forms of decoration known to the florist's art. The total amount offered in prizes in the preliminary schedule exceeds £90, and this comparatively large sum should ensure a display of the most beautiful and instructive character.

Special prizes are invited, but they must, in accordance with the resolution passed at the Edinburgh meeting, be free from any trade conditions. Already several firms have intimated their intention of providing the prizes in certain classes, and at this meeting it was decided to accept Mr. Henry Eckford's generous offer of £15, the sum offered in Class 1 for forty-eight bunches of Sweet Peas in not less than thirty-six varieties, an offer made by the Wem veteran to commemorate the fact that this is the twenty-first year of his work in selecting and cross-fertilising Sweet Peas. Mr. H. J. Jones' offer to supply the prizes in Class 25, for an epergne of Sweet Peas, £2 17s.; and Mr. R. Sydenham's offer to supply the prizes in two of the amateur classes, amounting to upwards of £5, were accepted and acknowledged. With reference to the rules and regulations for competitors it is worth while noting that from subscribers of 10s. 6d. and upwards no entrance fees will be demanded, but non-subscribers must pay an entrance fee of 5s. to entitle them to compete in any six classes (subject to divisional schedule regulations), but a further entrance fee of 5s. must be paid if this number is exceeded.

Conference proceedings, subscribers' tickets, publication of report, and other matters were referred to, but reserved for final discussion and settlement at the Committee meeting to be held on Friday, February 23rd, by which date the complete schedules and regulations will be ready for acceptance and immediate publication.

Meanwhile the Committee desires the sympathy and financial assistance of all horticulturists, so that the forthcoming celebration may be made the unqualified success its interest and importance demands. Any surplus funds remaining after the payment of prizes and necessary expenses will be given to the gardening charities.

Further particulars can be obtained from the Hon. Secretary, Mr. R. Dean, V.M.H., Ranelagh Road, Ealing.

LIBONIAS.—In the middle of winter, when the Chrysanthemum is over, and forced plants are scarce, there is sometimes a difficulty in keeping the conservatory gay until spring flowering stock puts in an appearance. Among those that might be successfully grown to fill the gap, Libonias take a prominent place. There are two in cultivation—i.e., *floribunda* and *penrhosiensis*. The former is a Brazilian species, which makes a well furnished bush from 1 to 2 feet high, thickly clothed with small, light green leaves. The flowers are produced in abundance. They are about 1 inch long, and scarlet and yellow in colour. *L. penrhosiensis* is a hybrid between the above mentioned species and *Jacobinia Ghiesbreghtiana*, inheriting good qualities from both parents. It is sturdier in habit than *L. floribunda*, with larger, more acuminate leaves and bright red flowers. Libonias can be readily grown from cuttings in spring. From cuttings rooted in February good bushy plants from 9 to 15 inches high can be had by autumn. A mixture of loam, leaf soil, and decayed manure in equal proportions is suitable for the final potting; loam, leaf soil and sand for the former. By the beginning of June plants should be well established in flowering pots, when they ought to be stood outside until autumn. If the plants are cut back after flowering and started in a little heat, they can be kept for several years in good condition.—W. D.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—JANUARY 23RD.

THE Drill Hall was not particularly well filled with exhibits on Tuesday, but the Primulas in the floral section and the Orchids made a beautiful display. The latter were of exceptionally high quality.

FRUIT COMMITTEE.—Present: Geo. Bunyard, Esq. (in the chair); and Messrs. W. Poupart, J. Cheal, Jas. H. Veitch, A. H. Pearson, A. Dean, S. Mortimer, J. W. Bates, C. Herrin, G. Wythes, H. Balderston, J. Smith, G. Norman, J. Willard, and R. Fife.

Messrs. Sutton, Reading, staged four boxes of their new Tomato Winter Beauty; the fruits were excellent in colour, and of good size. Messrs. G. Bunyard & Co., Maidstone, showed an interesting display of Apples, which included the American variety Twenty Ounce, White Nonpareil, Farmer's Seedling, a beautiful dish; Belle de Pontoise, a good kitchen variety; Beauty of Kent, King of Tompkins County, Foster's Seedling, a cross from Blenheim and Cellini Pippin; and Rambour Papalen. Needless to say all were staged in the best possible condition. Several dishes of Apples were staged, but failed to secure any award or notice from the Committee. The Fruit Committee passed a vote of condolence with the family of the late Mr. R. D. Blackmore, who was for many years a member of that body.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); and Messrs. C. Druery, H. B. May, R. Dean, J. H. Fitt, Jas. Hudson, G. R. Fielder, Geo. Gordon, J. W. Barr, C. E. Shea, H. J. Cutbush, E. T. Cook, Chas. Blick, Geo. Paul, and J. Fraser (Kew).

Messrs. H. Cannell & Sons, Swanley, Kent, arranged a large table of single Primulas of varied colours. The plants were of dwarf habit, and all appeared to be robust. The most noteworthy varieties were White Lady, an excellent white with dark foliage; Dr. Nansen, a rosy red; Mrs. R. Cannell, a white with long footstalks and dark foliage; Duchess of Fife, a charming variety with pink flowers, very distinct; The Sirdar, a large salmon pink; Miss Dorris, a white with Fern-leaved foliage, and Swanley Blue.

A beautiful exhibit of Ferns was staged by Messrs. J. Hill & Son, Lower Edmonton, which embraced several well grown specimens, also a quantity of decorative Ferns. The best examples were *Asplenium caudatum*, *Gymnogramma peruviana cristata*, *G. schizophylla gloriosa*, *Nephrolepis multiceps*, and *Polypodium phymatodes*. The smaller plants of *Lastrea aristata variegata*, *Lastrea lepida*, *Adiantums* in variety, and *Pteris Victorice* were no less pleasing. Messrs. Hugh Low & Co., Bush Hill Park, staged a fine collection of *Cyclamen Papilio*, the white variety Bush Hill Pioneer, and the red form being well grown, while the mixed colours were particularly attractive. Messrs. Barr & Sons, Covent Garden, showed two bowls of the Sacred Lily of Japan, well developed and in good form. Messrs. Jas. Veitch and Sons, Ltd., Chelsea, sent a basket of *Hamamelis arborea*, with its quaint flowers, also a box of their beautiful hybrid *Rhododendrons* in good variety, the colours being exceedingly bright and varied. Mr. Jas. Hudson, gardener to L. de Rothschild, Esq., Acton, staged a fine vase of *Justicia flavicoma*, an attractive yellow flower that is welcome at this season.

ORCHID COMMITTEE.—Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. J. O'Brien, Jas. Douglas, E. Hill, A. Hislop, A. H. Tracy, F. J. Thorne, W. H. Young, H. J. Chapman, J. T. Gabriel, F. Sander, de B. Crawshaw, H. T. Pitt, and W. H. White.

Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, contributed a most beautiful group of *Phalenopsis*. The splendid spikes comprised many of the best known forms. From the same source also came a grand plant of *Dendrobium atro-vioaceum*, *Laelio-Cattleya callistoglossa Princess of Wales*, and a few other Orchids. Mr. J. Downes, gardener to J. T. Bennett-Poë, Esq., Cheshunt, showed a handsome specimen of *Laelia anceps Sanderiana* carrying four fine spikes. Messrs. Charlesworth & Co., Heaton, Bradford, staged *Laelio-Cattleya Sunray*, L.-C. Charlesworthi, L.-C. Cappei, and *Cypripedium Cowleyanum magnificum*.

A superb branching spike of *Odontoglossum crispum* came from Mr. Hill, gardener to Lord Rothschild, Tring, and *Dendrobium Galatea* from Mr. R. J. Thwaites, Christchurch Road, Streatham. Messrs. H. Low & Co., Bush Hill Park, sent *Phalenopsis Schilleriano-Stuartiana* and *P. intermedia Brymeriana*, with two forms of *Cymbidium Traceyanum*. Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, was represented by *Odontoglossum Wilckeanum Schröderianum* and *Dendrobium Vannerianum*. Mr. N. C. Cookson showed from Wylam-on-Tyne *Cypripedium Sanderiano-Curtisi*, or, as the officials of the Orchid Committee preferred it, *C. Somdenimo Curtisi*. Mr. Hislop, gardener to H. S. Leon, Esq., Bletchley, showed *Laelio-Cattleya Fanny Leon*.

Mr. J. Barker, gardener to W. Birkenshaw, Esq., Hesse, exhibited *Cypripedium nitens Hesse* variety and *Adrastus punctatum*, both handsome forms. *Cypripedium Mooreanum* and *Beckmanni* came from F. F. Moore, Esq., Bourton-on-the-Water, as did *Cattleya Percivalliana*, Chardwar var. *Odontoglossum crispum castum* was staged by Sir William Marriott, Bart., while *Odontoglossum Rossi* Mrs. de Barri Crawshaw, and O. R. Lionel Crawshaw came from Mr. de Barri Crawshaw, Sevenoaks. Messrs. F. Sander & Co. St. Albans, exhibited *Dendrobium Madonnæ* and a splendid plant of *D. atro-vioaceum*.

Messrs. J. Veitch & Sons, Ltd., Chelsea, contributed a charming group of Orchids, in which *Cypripediums* played a very conspicuous

part. These included *Niobe*, *Euryades* in variety, *Lathamianum*, *Actæus*, *vexillarium*, *Charles Canham*, *Leeanum*, *Æson*, *Godseffianum*, *Pharos*, and *Harrisianum superbum*. *Dendrobiums* were represented by *Findlayanum*, *Dulce*, *atro-vioaceum*, *Cassiope*, and *Endocharis*. There were also *Laelia* Mrs. M. Gratrix, L. Mrs. M. Gratrix *superba*, *Laelio-Cattleya Pallas*, *Cypripedium Actæus langleyense*, *Phaio-Calanthe insperata*, and *Epidendrum Wallisio-ciliare superbum*.

Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Dorking, exhibited *Dendrobiums burfordiense*, *melanodiscus Rainbow*, and *Cordelia* with *Tainia Penangiana*, *Maxillaria leptosepala*, *M. arachnites*, *Epidendrum amplexicanle*, *Cypripedium Sallieri-Hyeaunum*, *C. Leeaunum Albertianum*, and *Calanthe Regneri hololeuca*.

MEDALS.—Large exhibits were not particularly numerous on this occasion, and medals were not therefore abundantly awarded. Floral Committee: silver Flora medals to Messrs. H. Cannell & Sons and J. Hill & Son; and silver Banksian medal to Messrs. H. Low & Co. Orchid Committee: silver Flora medal to Mr. W. H. Young.

CERTIFICATES AND AWARDS OF MERIT.

Apple Hornead's Pearmain (G. Bunyard & Co.).—An excellent Apple, that is comparatively well known and highly appreciated (award of merit).

Apple Norman's Pippin (G. Bunyard & Co.).—Not a particularly attractive fruit. It is uniform greenish yellow, with profuse markings of russet. The eye is deeply set, and the long thin stalk is inserted in a round cavity (award of merit).

Calanthe Regneri hololeuca (W. H. White).—A pure white variety of chaste beauty (award of merit).

Cypripedium Actæus langleyense (J. Veitch & Sons).—This is a hybrid from a cross between *C. insigne Sanderæ* and *C. Leeaunum*. The petals are very pale green, with a tinge of yellow. The pouch is yellowish green. The handsome dorsal sepal is white, with a green base and sparse purple spots (award of merit).

Cypripedium Sanderiano-Curtisi (N. C. Cookson).—This is a beautiful hybrid. The prevailing colour is deep claret, the long petals being profusely spotted. The dorsal sepal is greenish white with purple stripes (first-class certificate).

Epidendrum Wallisio-ciliare superbum (J. Veitch & Sons).—A grand variety. The stout sepals are intense deep yellow, and the petals are slightly paler. The splendid lip is white with purple markings (first-class certificate).

Laelia Mrs. M. Gratrix *superba* (J. Veitch & Sons).—A very much improved form of the type represented in the engraving, fig. 71, page 377, last vol. (award of merit).

Laelio-Cattleya callistoglossa Princess of Wales (W. H. Young).—A very beautiful pale coloured form of the well known bigener (award of merit).

Laelio-Cattleya Charlesworthi (Charlesworth & Co.).—A handsome hybrid from *Laelia cinnabarina* and *Cattleya aurea*. The petals are deep brick red, and the sepals are of slightly lighter shade. The lip is reddish maroon (award of merit).

Laelio-Cattleya Fanny Leon (W. Hislop).—No parentage was given of this bigener hybrid. The sepals and petals are rose purple, and the lip is velvety maroon with a paler margin (award of merit).

Laelio-Cattleya Sunray (Charlesworth & Co.).—This resulted from a cross between *Laelia cinnabarina* and *Cattleya superba*. The sepals and petals are cinnamon yellow, lighter in the first named; the lip is velvety purple crimson (award of merit).

Phalenopsis intermedia Brymeriana (H. Low & Co.).—A most attractive flower. The sepals and petals are white tinged with rose, and the lip is deep crimson (award of merit).

Phalenopsis Schilleriano-Stuartiana (H. Low & Co.).—A most attractive flower. The broad petals are white with deep rose in the centre, as is the upper sepal; the lower sepals are white with rose spots and suffusion, as is the lip (first-class certificate).

Rhododendron multicolor Triton (J. Veitch & Sons).—A salmon pink variety of great beauty (award of merit).

THE NEGLECT OF FLOWERING SHRUBS IN OUR GARDENS.

This was the subject of a discourse delivered at the afternoon meeting in the Drill Hall by Mr. G. Bunyard, V.M.H. The attendance was not so large as might have been wished, but those present were evidently interested in the remarks. It was not, as is generally the case, a set essay, but a dissertation from notes. The subject is one that has been frequently treated of in the horticultural press, but, so far as small gardens are concerned, with little apparent effect, and it is to be hoped that Mr. Bunyard's views when embodied in an article and reproduced in the Journal of the Royal Horticultural Society will be productive of immediate and lasting good. Needless to say, the lecturer dealt with his subject in a masterly manner.

CARNATION MRS. THOS. W. LAWSON.—We are informed that Mr. Thomas F. Galvin has received orders for over 300,000 rooted plants of the famous 30,000-dollar Carnation. Considering the fact that it is barely three months since the announcement was made that the cuttings would be placed on the market, the amount of the orders received to date is phenomenal. The plants will be ready for delivery after February 1st, and it is advisable that orders should be forwarded at once to Mr. Galvin, 124, Tremont Street, Boston, Mass.

THE YOUNG GARDENERS' DOMAIN.

BITS FOR THE BOTHY.

TO OUR RECRUITS.

ERE the strains of the new year's march are lost in the din of more pressing engagements as days lengthen and work increases, one would fain marshal a few thoughts in review order for our boys of the bothy brigade. Not only is the present time apparently opportune to do so, but since "An Old Boy" exercised the young ones on the drill ground of this "Domain," not a few must have received their commissions and gone to the front in the great battle of life. In the common sequence of things there must be many fresh faces in the ranks, those who have lately "listed" under the glorious banner of imterior Nature, whose orb is the sun, whose sceptre is the elements. Unfortunately there is no new drill book to claim attention by the charms which novelty ever possesses, but the endeavour shall be made to introduce fresh illustrations to point that moral which is its superscription—duty—viz., duty to your vocation and duty to yourselves, two separate parts but inseparably bound up in the single volume of a gardener's life.

Few, perhaps, realise the importance of gardening in the great problem of life. In its rapid growth and far reaching influence, however, there are not wanting signs for the seer to interpret and predict its eventual development into the highest, and possibly the noblest of man's administrative works; to remain as such when huge armies, gigantic navies, and the diamond mines of Africa have passed from memory as things no longer worth remembering. "That's going a long way ahead," some will say. That is so. It goes eventually as far as Nature goes, and when and where she stops all things end and time is a forgotten circumstance. One would like (but how feeble must be the attempt) to impress upon those who have chosen the good life of a gardener, the beauty, and purpose, and power of this great empire of Nature. Alas! It cannot be, "for this great scene thought is too low, and majesty too mean." If the precocity of youth demands something more practical. Emerson says, "The mind that is parallel with the laws of Nature will be in the current of events, and strong with their strength."

"Gardening is a tame sort of business" has been said. It is a libel on it and on Nature. "People are so practical nowadays; they want plenty of Potatoes, and a very little philosophy will go a long way." True, but it seldom goes far enough to show things as they are and not what they seem. There is more complex mechanism and comparative power in a bursting bud than in a lyddite shell; but there is an epidemic of moral blindness about which shuts people's eyes to the fact, not to speak of that mock modesty abroad which would clothe the naked truth in the khaki of shoddy reasoning, and prostitute the infinite into the fashion of an hour. But enough, if sufficient has been said to prevent any young fellow from even thinking that his life's work before him can ever be "tame."

Congratulations to each recruit now toeing the gardening line at the dawn of the twentieth century. From this eminence what a glorious vista of possibilities opens out. As for the present, we elders cannot help feeling a little regret that fate had not postponed our advent upon this planet until we could have been dropped down, just as they have been, among the marvels of Marconi telegraphs, pneumatic wheels, electric lighted stokeholes, telephone in the potting shed (all accomplished facts), and all the blessings of this life which are ready to hand. But above and beyond such brilliant things as tend to throw into deep shadow the decades of one's early days is that recognition of the recruit as an important factor in the noble army of gardeners. Veterans of to-day realise the value of such things by reason of their own impoverished youth when some gardens were to them only a kind of work-house, governed by such poor laws as left lads veritable paupers so far as sympathy with their aspirations, and encouragement generally, were concerned.

That things were not wholly bad in the days of auld lang syne is admitted, but somehow it was more the mailed fist than the hand of friendship which governed in the garden. How pleasant it is now to see a master impress good counsel by a friendly hand laid on a lad's shoulder as against that grip of the ear old boys enjoyed (?) as it was forcibly wrung to emphasise the vituperative poured into it by the vials of wrath! Exaggerated? No. In one large garden such things were almost of daily occurrence, and during summer, when half a dozen boys were employed pulling Peas or picking fruit, unearthly yells were often heard from lads who had momentarily mistaken a mouth for a basket. Nor was the bothy exempt, as witness that auricular demonstration between "t' gaffer" and a comrade who had stoned his dog, a vicious brute whose partiality for calves was second only to his master's fondness for ears. How it all flashes again through the cinematograph of memory! The "gaffer" dogging him to the bothy and running him to earth in the kitchen, where half a dozen of us witnessed the humiliating spectacle of M—— being pinned by both ears from the rear as he was lustily kicked from the same direction, to a duet of chin music by both master and man.

1900 brings with it such a hurrying of feet for the front that it seems wasted time to pause and ponder over the past. More haste, less speed, however. Going back a brief space gives an impetus for getting on. This worrying spirit of the age seems to lash its victims into a fury of haste to reach the goal of their ambition, and some of our recruits seem pretty badly infected with it too. There seems to be

a dread of bothy life (that dear old bothy life!) absorbing too large a share of the threescore years and ten; or is it that they think themselves so beloved of the gods as likely to die young, or what is it? One can scarcely account for this restlessness in bothydom. Here is a very bad case in point. He is two-and-twenty, bright, active, and intelligent, and loves his work. All this, and more also, marked him as one for whom all sorts of good things were predicted. "And what has he done?" you will ask. Well, his own words answer that, as he said, "I've got the 'missus,'" in presenting her whom we had supposed to be his sister. "Had to leave So-and-so; Mr. — wouldn't keep a married mau (boy we mean) in the bothy." And now he is looking for a situation; they were both looking, and "knew they had a friend in"—THE OLD BRIGADIER.

(To be continued.)



FRUIT FORCING.

Vines.—*Early Forced in Pots.*—Thin the berries somewhat freely as soon as well set, so as to secure large ones, yet not to the extent of making the bunches loose and unshapely. Maintain the night temperature at 65°, falling to 60° on cold mornings, but raise the heat early to 65° or 70°, keeping at 70° to 75° by day, increasing to 80° or 85° with sun heat, and closing at 80°, with a prospect of an advance to 85° or 90°. Ventilate very carefully, always early, closing in good time, then damping the house. Sprinkling is also necessary early in the day. Afford copious supplies of tepid liquid manure.

Early Forced House.—Duplicate and superfluous bunches should be removed, and the berries thinned as soon as they become well formed, not deferring it beyond the distinguishing of the fertilised from the unfertilised. The inside border may be covered about an inch thick with sweetened short stable manure, which should be turned several times before it is introduced, otherwise the ammonia evolved may prove injurious to vegetation. Attention will be required in tying the shoots and in stopping the laterals. Where space is restricted the shoots may be stopped closely, say one joint beyond the bunch, and the laterals be pinched at every joint as made. In other cases more growth may be allowed, but in all it is important that the principal leaves have full exposure to light and air.

Vines in Flower.—When coming into bloom maintain the night temperature at 65°, 70° to 75° by day, 5° to 10° more from sun heat. Muscat of Alexandria and all the shy setting varieties should have 5° more, and the bunches should have all the light possible, and their ends facing the sun, then when in flower they can be rapped on the stem gently, or better have the pollen dispersed on the stigmas by using a camel's-hair brush charged with pollen from free setting varieties. A constant circulation of warm, rather dry air is conducive to a good set, and it is advisable not to stop the growth closely during the setting period.

Vines Started at the New Year.—Continue syringing the rods twice a day, but do not keep them constantly wet, as this induces aerial roots from them, and interferes with proper root formation. Syringing may be continued until the bunches show, but then damping the borders and paths two or three times a day will be necessary to maintain a genial condition of the atmosphere. Do not be in a hurry to disbud, letting the growths advance until the bunches appear in the points of the shoots, then the weaker and otherwise less desirable can be removed; but it should be done gradually, so as not to cause an appreciable check.

Vines to Afford Ripe Grapes in July.—The beginning of February is the latest time for starting midseason varieties to finish after midsummer. Outside borders, even where the roots of the Vines are entirely outside, need not be covered with fermenting materials, but a covering of leaves with a little litter over them to prevent them blowing about is all that is necessary to prevent the soil becoming frozen. The stems of the Vines, if outside, must also be thoroughly protected by haybands wrapped round them. Maintain a minimum temperature of 50° and allow an advance to 65° from sun heat, 55° being the maximum from fire heat in the daytime. This will cause the sap to rise steadily, and a light damping occasionally promotes the osmotic action of the cells, and the transference of stored matter from the wood to the growing parts. Due moisture at the roots is also imperative, for though the moisture may not be excessive some is necessary. Therefore moisten the border through to the drainage, using water very slightly in advance of that of the house in temperature, and if the Vines are weakly and the border in good order afford liquid manure after the moistening of the soil, which will to some extent displace the water and afford nutriment in due time.

Eyes and Cut-backs.—Eyes may now be inserted, using pots, pans, or square pieces of turf. Select plump buds on firm well-ripened

wood, filling the pot or pan with rich friable loam; insert the eyes with a pinch of silver sand, and about half an inch beneath the surface. Plunge the pots in a bottom heat of 80°. Cut-backs should be placed in a house where they will have a temperature of 60° to 65° at night and 70° by 75° by day. When they have started into growth shake them out, and return to the same size of pot, using good friable loam, and give a rather close and moist atmosphere until re-established, when they should have a position near the glass, so as to insure sturdy, short-jointed, thoroughly solidified growth.

Strawberries in Pots.—The November started plants have set the fruits fairly well, and are swelling the six to a dozen berries per plant freely. The December plants being brought on slowly are advanced for flowering, when they should be freely ventilated, have the weaker flowers removed, and the pollen distributed with a feather as soon as ripe. After the fruit is set thin them to the number the plant is likely to swell perfectly. Whilst the fruit is setting 50° to 55° will be sufficient heat artificially, and 60° to 65° by day with sun heat, but after the setting is effected remove the plants to a house with a temperature of 60° to 65° at night and 70° to 75° by day, supplying liquid manure until ripening commences; then employ water only and sparingly. Whilst swelling they require a moist genial atmosphere.

Successional plants must not lack water, but needless watering is highly prejudicial, therefore examine each plant, and afford a supply only when required. The plants succeed best when brought on gently, a temperature of 50° from fire heat being ample. Examine the plants carefully for aphides, and if there be any trace fumigate moderately, taking care to have the plants perfectly clean before they come into flower. Introduce more plants for succession.

THE KITCHEN GARDEN.

Cauliflower.—If the stock of autumn-raised plants is too limited, more seed ought to be sown now. The small so-called forcing varieties are the quickest to heart-in, and with these may be raised successional and late varieties, including Autumn Giant. The seeds should be sown thinly in boxes of fresh loamy soil, and be placed in gentle heat to germinate. Be careful not to syringe the seedlings, as this may encourage damping. Before they become much drawn place the plants on shelves near the glass in a warm greenhouse. The stems must become moderately firm before the plants are placed singly in small pots. Cauliflowers in frames and hand-lights should have the soil about them stirred, and a dusting with dry ashes to ward off slugs.

Celery.—If very early Celery is wanted seeds of a good white variety may be sown at once thinly in pans of fine soil placed in a brisk, moist heat, covered with squares of glass, and shaded heavily. The soil must be kept uniformly moist, and this can best be done without disturbing the seeds by partially immersing the pans as often as necessary in tepid water. Celery that has already been crippled somewhat by frost stands in the greatest need of protection afterwards.

Leeks.—If fine Leeks are wanted in the summer seeds of a good exhibition variety should be sown now, thinly in pans, and placed in heat to germinate. In many gardens green vegetables are becoming somewhat scarce, and the Leeks, hitherto somewhat despised, will soon be more appreciated.

Lettuce.—Slugs have cleared off autumn raised plants wholesale, it being next to impossible to save them during the long spell of wet and comparatively mild weather. Luckily plants of Early Paris Market and Golden Queen Cabbage varieties, raised early in the year, heart in very quickly, so that the loss of autumn raised plants will not be felt by those who sow seed promptly and place them in gentle heat to germinate. Directly the seedlings are through put the pans or boxes on shelves near to the glass. If plants of the varieties named have been kept through the winter they may be gently forced either in boxes of rich loamy soil in a light position in a vinery or Peach house, or a mild hotbed may be prepared.

Tomatoes.—Autumn raised plants are the best for producing early crops of fruit. They ought not, however, to be kept in small pots long enough to become leggy and hard in the stems, as when in such a plight they seldom develop into stout productive plants. Pot culture answers best in the case of early crops, and the plants may be shifted straight from 3-inch pots into the fruiting sizes—10-inch to 12-inch. The best positions are the fronts of small forcing houses, arranging the pots closely together on a bed of soil or ashes, into which the Tomatoes may eventually send their roots, and training the plants, confining them to single stems, straight up the roofs. Fill the pots with rich loamy compost, and when it is well warmed through plant in this, making the soil somewhat firm. Not much water should be given at first, but later water or liquid manure will be required daily. If preferred the plants may be put out in a narrow ridge of soil much as Cucumbers are planted, adding compost occasionally in the shape of top-dressings. Very high temperatures are a mistake. From 55° to 60° and 65° is quite hot enough. When the plants are growing strongly give a little top air on warm days.

Sowing Tomato Seed.—Plants obtained by sowing seed now will, if properly managed, produce the heaviest crops of all. Sow seeds of approved varieties thinly, or singly, as this is almost the only way to avoid having too many plants, in pans or boxes of light sandy soil, and place in heat to germinate. Before the seedlings become leggy raise the pans or boxes well up to the glass, and when rough leaves have formed, put the plants singly in 3-inch pots.

THE BEE-KEEPER.

BEES IN WINTER.

It is interesting to observe the condition of the bees in winter as well as in summer. Not that we recommend a general overhauling of the stocks at this season, when the temperature is low and the bees are in a state of stupor. It is, however, only by making an examination of the various colonies that we are enabled to form a correct opinion as to their condition and the position the bees occupy in the hive. During a recent spell of mild weather, when the temperature was several degrees above freezing point, but not warm enough for the bees to be on the wing, we examined several strong colonies in straw skeps as well as those warmly housed in wooden hives. In many instances the skeps had not been lifted from their stands since the swarms were placed in them in the summer, consequently they were firmly secured to the floor board with propolis.

Before attempting to lift the skeps an old table knife was passed under the lower rim of straw; the hives were then lifted without any trouble. In replacing them on the floor board care was taken to put them in exactly the same position they previously occupied. No undue ventilation was afforded them from the sides, as the entrances had been left open their full width throughout the winter. In the majority of instances we found the bees clustered close to the side of the skeps in a state of stupor.

This fact will probably come as a surprise to many bee-keepers, as the bees are usually supposed to be in the middle of the hive. This is the position they occupy in the modern wooden frame hive; at least such was the case with those we examined, as there was not a single instance of the bees being clustered on the side combs.

What are the lessons to be learnt from the above? We think there cannot be two opinions on the subject. It was owing to the straw being warmer than the wood that the bees clustered in the manner they were found. In each case the hives were well protected; the majority of the frame hives had double sides, the extra coverings being on the top of the frames. Thus the bees clustered on the middle combs, which was doubtless the warmest part of the hive.

HIVES FOR GENERAL USE.

Bearing the above facts in mind, it may be an advantage to ask which are the best hives for general use? Although straw may be warmer than wood, it does not follow that more honey will be obtained from a stock of bees placed in a straw hive than would be secured had they been in a hive made solely of wood. Bee-keepers are fully alive to the fact that one of the chief essentials to successful wintering is a warm, dry hive. But for various reasons straw is not adapted for frame hives. Although we have seen it successfully used in conjunction with wood for that purpose, the sides being made of straw, and the corners, bottom, and roof of wood. They had a neat appearance, and bees invariably wintered well in them.

The best hive we consider for general use is the one that any handy man may make in his spare time. All that is necessary is to have a pattern to work from, and this is best obtained by procuring a good hive from a bee-keeper or a tradesman who deals in bee appliances, and make others like it, care being taken that the measurements are correct. If all the hives are made after the same pattern much valuable time will be afterwards saved in the practical management of bees.

Choose a hive holding ten, or, at the most, twelve standard sized frames. The sides should be double, having an air space which may be left open throughout the year, or be filled with cork dust in the winter. This can be removed in late spring, as the open air space at the sides will be beneficial to the bees during the prevalence of hot weather. It is doubtful whether it is worth the labour of filling the sides of the hive with cork dust or some other material for wintering purposes, as with double sides bees invariably winter well when this air space is left open throughout the year.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- R. H. Bath, Ltd., Wisbech.—*Seeds.*
 J. Cocker & Sons, Aberdeen.—*Seeds and Plants.*
 Cunninghame & Wyllie, Mitchell Street, Glasgow.—*Seeds.*
 M. Cuthbertson, Rothesay, N.B. *Seeds and Plants.*
 Kelway & Son, Langport.—*Manual of Horticulture.*
 Leeds Orchid Company, Roundhay, Leeds.—*Garden Specialities.*
 A. Robinson, 1A, Bishopsgate Without, London.—*Seeds.*
 H. Shoesmith, Claremont Nursery, Woking.—*Chrysanthemums, &c.*
 A. F. Upstone, Rotherham.—*Seeds.*

TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Punnets (Roons).—We regret to be unable to comply with your request. We are not in possession of any addresses such as you require. Cannot you obtain them by inquiries in the Leeds vegetable market?

English Paradise Stocks for Grafting in March (M. D.).—The stocks may be procured of any large nurseryman, especially those making fruit tree raising a specialty, by the 100 or 1000, at moderate prices. Write to one or more of the nurserymen advertising in our columns, stating requirements, and asking for quotation of price. The stocks now or shortly procured would hardly be fit to graft in March or early April next, as they will not have become established sufficiently to induce a vigorous growth in the grafts. The stocks would be all the better for growing a year before they were grafted, or they will be well rooted by the July following the planting, and could then be budded satisfactorily.

Fly and Spot in Cattleyas (C. A., Yorks).—The young leads of Cattleya you send are badly infested with Cattleya fly, a most pernicious pest that is usually introduced among newly imported Cattleyas and Lælias. Its effect is first to cause an abnormal swelling (fig. 18) of the buds (breaks), and afterwards to completely paralyse their growth, as in your case. The female fly punctures the soft tender growth, and lays the eggs that eventually form the grubs that do the mischief. There is no cure after the grub is ensconced in the living tissues of the plant, and every growth seen to be affected must be cut off at once. The affected buds can easily be detected by the swelling referred to. Occasional fumigations with XL All insecticide kill the female flies that may be in the house, and is in this way a certain preventive, and must be persisted in. You need be under no apprehension as to the result of cutting away the buds; only do it early enough, so that the plant has time to form back breaks, which will probably be clean. The swelling in the leaf is the dreaded "spot" (fig. 19) that has ruined thousands of Orchids. Cutting away and burning the worst affected leaves, and the maintenance of a genial atmosphere about the plants are the only remedies, and these are only partial. Sometimes the plants grow out of it, but usually they take a long time. If you have only a few plants as badly damaged as the leaves sent it would be advisable to burn them. We found several flies in the bottom

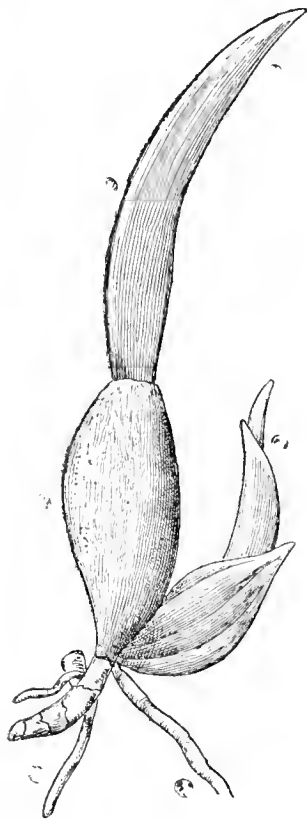


FIG. 18.
FLY IN CATTLEYA.

of the box, and advise you to fumigate the house in which the plants are growing with all speed. For the two illustrations from "The Flower Grower's Guide" we are indebted to the courtesy of Messrs. H. Virtue & Co., Ltd.

Rating of Vinery and Tomato House (Milton).—In answer to your question whether you are liable to pay rates for greenhouses or not, we may quote the following from our columns of August 10th, 1899, page 123:—"Judgment was given, on Thursday, by the Lord Chancellor, in the House of Lords, in an appeal which raised the question whether market and nursery gardens, upon which are greenhouses and other structures used for productive purposes, can claim the benefit of the Agricultural Rating Act of 1896, which relieves the occupier of agricultural land of half the rates in respect of the hereditaments and buildings upon the holding. At Worthing the overseers had returned a market garden and the structures upon it as agricultural land, but the surveyor of taxes treated them as buildings. The question was carried by way of appeal through the courts, and the noble and learned Lords now affirmed the judgment of the Court of Appeal, that a market garden with its buildings is not agricultural land within the meaning of the Act." You will perceive from the foregoing that you are not only liable to pay rates for greenhouses, though you are growing only for market, but cannot claim the benefit of the Agricultural Rating Act of 1896, which relieves the occupier of agricultural land of half the rates in respect of the hereditaments and buildings upon his holding.

Cavities in Apple Tree Twigs (W. K.).—The holes or scars on the Apple tree twigs are different from those caused by woolly aphis, and so peculiar, that we may at some future time portray the scarred appearance of the Apple twigs. The holes are caused by an insect called the buffalo tree hopper (*Ceresa bubalus*), which does not live, as a rule, on orchard trees, but develops on succulent vegetation; hence is most destructive in orchards and plantations, where weeds and other tender herbage are abundant. The scars are due to the egg punctures of the insect. The eggs are laid in the upper part of the young twigs of Apple, Pear, and various other trees, mostly during the late summer and early autumn months, being arranged in two nearly parallel or slightly curved slits, extending in the direction of the twig about 3-16ths of an inch in length, and separated by 1-8th inch or less of bark. In making the second slit the insect cuts the bark obliquely, in such a way as to leave a small piece loose. This causes the bark to die, and eventually leaves a dead space and hollow in the twig. These dead spots give the bark a cankerous appearance, and are excellent places for bark-fungi spores to germinate in. The eggs of the insect remain dormant until spring, then the small, active, greenish hoppers are hatched out, and they become full grown about the middle of summer. The limiting of weeds and other vegetation of a tender nature about orchards and fruit plantations, as well as in them, is an excellent precaution, little damage occurring where the ground is kept clean. In badly infested cases pruning is advisable, and as there are some scale on the twigs, spraying with a solution of caustic soda and pearlash, $\frac{1}{2}$ lb. each to 6 gallons of water, at a temperature of 130°, whilst the trees are quite dormant, would be serviceable. In the spring, treatment with petroleum emulsion could not but be useful against the hoppers and other pests.

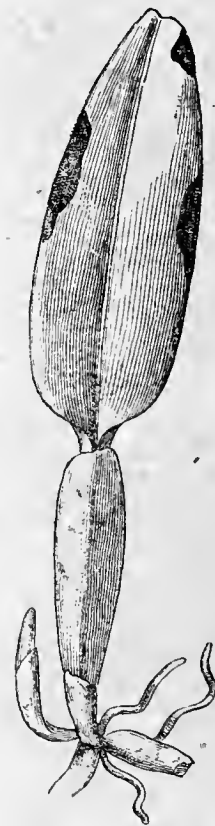


FIG. 19.
SPOT IN CATTLEYA.

Mixing Burnt Clay with Strong Loam for Rhododendrons (J. D.).—If your statement as to the nature of the land and the treatment to which it has been subjected is quite accurate, and if the loam contains a large percentage of gritty particles or the mud a considerable amount of silt or sandy or gravelly matter, the Rhododendrons will grow well, as the gritty matter will keep it open and sweet. On the other hand, if the loam be of a close nature and mud, ordinary pond accumulation with tree leaves, a sort of bog soil, the mixture of strong loam with pond mud would be greatly improved by adding burnt clay to it, say a fourth or not more than one-third. The burnt clay would tend to render the compost more open and correct any not unlikely organic acids resulting from the decomposition and settling of the pond mud into a close sour mass. Rhododendrons love moisture, but they do not thrive on a wet, cold, sour base. Burnt clay has a strong affinity for water, and though used for foundations of walks, holds or absorbs moisture in dry periods, so there is no need to fear anything from over-dryness, especially as the subsoil is clay. Pond mud in woody districts is largely composed of vegetable mould. Once we cleared out a morass of several acres, this being a former sheet of water silted up and choked by aquatic plants, threw the mud into large mounds of irregular form and in picturesque order, and in due course planted them with Rhododendrons and Azaleas, and had a grand American garden, the soil underneath being a stiff clay, in which Rhododendrons did not thrive. No greater mistake is made than digging pits for Rhododendrons and other American or peat loving plants. It is far better, especially in the case of clays, to raise mounds and plant on them, thus giving the stock the benefit of the cool base and the eye a far better prospect, as the hill-and-dale arrangement is more pleasing than a non-undulating surface.

Fixing a Trentham Boiler (*Ignoramus*).—Almost any bricklayer could fix this simple and excellent boiler. We could not give details of the process from start to finish without diagrams. These would probably be furnished by the supplier of the boiler, or at least he would give you the details you require on application.

Ornamental Grasses (*Tyro*).—The following are about 2 feet high and less:—*Agrostis dulcis* and *nebulosa*; *Briza major*; *Bromus briziformis*; *Chrysurus aureus*; *Coix lachryma*; *Eragrostis elegans* (Love Grass); *Hordeum jubatum*; *Lagurus ovatus*; *Paspalum elegans*; *Pennisetum longistylum*; and *Stipa pennata* (Feather Grass).

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (W. J.).—1, Gloria Mundi; 2, Bess Pool; 3, Court Pendu Plat; 4, Ribston Pippin. (B. L.).—Catillac. (N. F.).—1, Dumelow's Seedling, known also as Wellington and Normanton Wonder; 2, Red Winter Calville; 3, Northern Greening; 4, Bramley's Seedling; 5, Warner's King; 6, Blenheim Pippin. (Loughgall).—1, White Nonpareil; 2, Lord Hindlip; 3, Court of Wick; 4, Royal Russet; 5, unknown, probably a local seedling.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (P. F.).—1, Maranta Veitchi; 2, Tradescantia zebrina; 3, Peperomia argyrea variegata. The three Crotons can only be accurately named by comparison in a large collection. (H. O. N.).—1, Trichomanes radicans; 2, Microlepia hirta cristata; 3, Trichomanes reniforme; 4, Adiantum cuneatum var. (C. W. B.).—1, Cyperus natalensis; 2, Acacia longifolia; 3, Euonymus latifolius variegatus; 4, Thuiopsis dolabrata; 5, Cupressus Lawsoniana, seedling form. (O. M.).—Platyclinis (Dendrochilum) glumaceum.

COVENT GARDEN MARKET.—JANUARY 24TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case	4 0	to 15 0
" Canadian, barrel ...	10 0	15 0	Melons each	0 6	1 6
" Nova Scotian, barrel	10 0	17 0	Oranges, per case ...	5 0	15 0
Cobnuts per 100 lb....	60 0	70 0	" Tangierine, box...	0 6	1 9
Grapes, black	1 0	3 0	Pears, Californian, case...	6 0	9 0
" Muscat... ..	2 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	3 0	to 4 0	Herbs, bunch	0 2	to 0 0
Asparagus, green, bundle	2 9	3 3	Leeks, bunch	0 3	0 0
" giant, bundle	15 0	20 0	Lettuce, doz.	1 6	2 0
Beans, Jersey, per lb..	2 0	2 6	Mushrooms, lb....	0 6	0 9
" French Kidney, lb.	1 6	0 0	Mustard and Cress, punnet	0 2	0 0
" Madeira, basket ...	3 0	4 0	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz....	0 6	0 0	Parsley, doz. bunches	2 0	4 0
Brussels Sprouts, ½ sieve...	1 6	2 0	Potatoes, cwt.	2 0	5 0
Cabbages, per tally ...	7 0	0 0	" Teneriffe, cwt....	18 0	28 0
Carrots, per doz. ...	2 0	3 0	Seakale, doz. baskets	12 0	15 0
Cauliflowers, doz. ...	2 0	3 0	Shallots, lb.	0 3	0 0
Celery, per bundle ...	1 0	1 9	Spinach, per bushel...	3 0	5 0
Cucumbers, doz. ...	4 0	8 0	Tomatoes, per doz. lbs.	2 0	5 0
Endive, doz.	2 6	0 0	Turnips, bunch... ..	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Lilac, white, bundle ...	7 0	to 9 0
Arums	8 0	10 0	" mauve, bundle ...	8 0	10 0
Asparagus, Fern, bunch...	2 0	2 6	Maidenhair Fern, doz. bnch	8 0	10 0
Bouvardia, bunch	0 6	0 9	Marguerites, doz. bnchs.	3 0	4 0
Carnations, 12 blooms ...	2 6	3 6	" Yellow, doz. bnchs.	4 0	6 0
Cattleyas, per doz. ...	12 0	24 0	Mimosa, per bunch ...	2 6	3 6
Christmas Roses, doz. ...	1 0	2 0	Mignonette, doz. bunches	6 0	8 0
Chrysanthemums, white			Narcissus, white, doz. bun.	2 6	6 0
doz. blooms	6 0	9 0	" Yellow, doz. bunches	5 0	8 0
" yellow doz. blooms	5 0	8 0	" double, doz. bunches	2 6	4 6
" bunches, var., each	1 6	3 0	Odontoglossums	5 0	7 6
Daffodils, double, doz. bnch	15 0	18 0	Pelargoniums, doz. bnchs	8 0	12 0
" single, doz. bnch.	15 0	18 0	Poinsettias, doz. ...	12 0	18 0
Eucharis, doz.	6 0	8 0	Roses (indoor), doz....	6 0	8 0
Gardenias, doz.	6 0	8 0	" Red, doz....	6 0	8 0
Geranium, scarlet, doz.			" Safrano, packet ...	2 6	3 6
bnchs.	9 0	12 0	" Tea, white, doz. ...	3 6	6 0
Hyacinth, Roman, doz. ...	8 0	10 0	" Yellow, doz. (Perles)	5 0	7 6
Lilium Harrisii, 12 blooms	12 0	18 0	" Maréchal Niel, doz.	6 0	12 0
" lancifolium album ...	3 6	4 6	Smilax, bunch	5 0	7 6
" rubrum	3 6	4 6	Violets, Parma, bunch ...	6 0	8 0
" longiflorum, 12 blooms	8 0	12 0	" dark, French, doz.	2 6	3 6
Lily of the Valley, 12 bun.	12 0	18 0	" " English, doz.	2 0	3 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100 ...	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Crotons, doz.	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz.	8 0	12 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz....	12 0	30 0	Mignonette, doz.	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	20 0
Ferns, var., doz.	4 0	18 0	Solanums per doz. ...	9 0	18 0



POTATO EXPERIMENTS IN CHESHIRE.

THE Cheshire County Council is an enterprising body, and the Agricultural School at Holmes Chapel is conducted in a most admirable way. Very extensive experiments are carried on, and in such variety that it is impossible to notice all in the scope of a short article, but we propose to make some observations on the success or otherwise of several that have been made in the growth of Potatoes, and which appear to us to deserve attention. There is one point we should like to suggest to Mr. Gordon, the able Director, and it is this—an omission is made in the report which might easily be fulfilled next year. Every characteristic of the different varieties is mentioned except the strength of the haulm. The relative length and strength of the haulm in connection with either early or late ripening is a very important point, and one which men of experience would insist on knowing before investing largely in any variety.

There is a great deal that is interesting in these experiments, in fact a plethora of information. The results which attract our attention the most are those which confirm our own experience, and those which apparently contradict themselves.

We notice that in the larger experiments with a few of the varieties tried in 1898, the results come out very much as in that year, the exceptions proving a rule—i.e., that varieties of robust growth stand drought better than those with weak haulm. Almost the most interesting are the trials with various sized sets. There were six sizes tried, averaging respectively 1 inch diameter, 1½ inch whole, 1½ inch cut in two, 1½ inch, 1½ inch, and 2½ inch. The weights were respectively 1 oz., 1.37 oz., 0.68 oz., 2.6 oz., 3.9 oz., and 5.4 oz. The gross results were 11 tons 15 cwt. 3 lbs.; 12 tons 13 cwt. 1 lb.; 10 tons 13 cwt. 2 lbs.; 12 tons 18 cwt.; 13 tons 1 cwt.; and 13 tons.

18 cwt. 1 lb. It is clearly shown here that the produce increases with the size of the original plant up to a certain point, from which the gain is proportionately less, and consists of smaller and less valuable Potatoes.

If we take the weight of 1 oz. sets to plant an acre to be 10 cwt., then the weight of 5.4 oz. sets the same distance apart would be 2 tons 15 cwt, or 2 tons 5 cwt. more, whereas the increased produce is only 2 tons 2 cwt. 2 lbs. The largest proportionate gain is shown by the 2.6 oz. sets, which require 16 cwt. more to plant an acre, and produced more by 1 ton 3 cwt. The "Maincrop," the variety used for these trials is not a very robust grower, having a large number of weak but tall and fairly erect stems. We do not consider it a typical variety for a trial of this kind, and think that it would do the best from seed of about 6 oz. cut in two.

One useful lesson we may learn, which is that large-sized seed will pay when the seed is cheap, but under dearer conditions we must practise economy by sparing the sets if we have to increase the manure bill. We may be wrong, but we think that if trials of different sized sets had been carried out with three varieties instead of one, the lesson would have been more instructive.

Many trials were conducted with different manures, and with farmyard *versus* artificial manures. It was proved that artificial manures largely increased the crop, but not so much so as farmyard manure. To use the words of the report:—"The effect of farmyard manure shows clearly that the yield of crop does not depend entirely on the chemical ingredients used, but that the mechanical condition of the soil influences the yield to a large extent."

Sulphate of ammonia, in conjunction with farmyard manure and superphosphate, gave better results than nitrate of soda under the same conditions, and produced 28½ cwt. more saleable Potatoes than nitrate. This we should have expected. Nitrate applied at planting gave slightly better returns than when applied before earthing. Sulphate of ammonia at planting time would probably have done much better than either.

The most curious results are found in connection with the use of potash. Two forms were applied—kainit and muriate of potash. Five cwt. of kainit produced 23½ cwt. less Potatoes than 1 cwt. of muriate; but 2 cwt. of muriate produced 3 tons less 1 cwt. All three experiments were tried in conjunction with farmyard manure—nitrogenous and phosphatic manures. There is something very strange in these results, and we fancy we can account for them, although the Cheshire authorities pass them over without remark. The land on which the trials were made had been sown with Oats the previous year, having been in grass for eighty years, and we are told that there was a large quantity of old sod not decomposed when the Potatoes were planted. Thus with the addition of muck, nitrate and super, the land must have been in very high condition, and the addition of the potash would make very little difference, and especially the kainit, which would not be in a very assimilable form; but why should the increase of the muriate do absolute harm? We think this may be attributed to the muriatic acid.

We ourselves some time ago tried kainit, 4 cwt. per acre, against muriate of potash, 1 cwt., for Turnips, and with a view to a succeeding crop of Potatoes. A strip between the two plots was untilled. The kainit plot produced a slightly better crop than the untilled, but the muriate plot was far worse; the young plants were so long coming to the hoe. This we attributed to the bad influence of the muriate; but it did not extend to the Potato crop, which was satisfactory on both plots. Thirty years ago we saw similar bad results follow heavy applications of muriate of ammonia to Potatoes; 4 or 5 cwt. per acre was the quantity used, and other fields were dressed with similar quantities of sulphate of ammonia. The effects of the muriate were so very unsatisfactory that it was never tried again.

Another interesting trial was that between sulphate of ammonia and nitrate of soda as to their influence on foliage, size, and cooking quality of the crop. Sulphate was superior in producing better haulm and size of tubers, whilst the cooking quality was very good. Nitrate produced very pasty, dark-ended Potatoes.

Three important conclusions may be drawn from the trials:—

- 1, Large seed is more profitable than small seed.
- 2, Care must be exercised not to use muriate of potash in too large quantities.
- 3, Sulphate of ammonia is the best form of nitrogen to apply to Potatoes.

The yield per acre is less than last year's in almost every Potato tried.

We congratulate Mr. Gordon again on the success of such exhaustive experiments, which must have entailed so much labour and trouble.

WORK ON THE HOME FARM.

The weather keeps mild, but is very wet, and the land is quite unapproachable with horses. Farmers are here and there cross-cutting their fallows, but the horses would in most cases be better in the stable. The rain has hindered thrashing, but the smaller supplies of English grain have done the markets no good. We see published statistics showing that the visible supply of Wheat is larger than it has been for four years, so there is not much encouragement for farmers to hold.

Lair for sheep on Turnips is very bad. Many flocks are now on grass receiving a mixture of Swedes and Mangold, with hay and an extra allowance of cake. As Swedes are so scarce this is good policy, although the Turnip land will be robbed of a portion of the manure. Its mechanical condition, however, will be better for the absence of the sheep during such a wet time, and possibly may fully compensate in the Barley crop.

Breeding ewes on Turnips are a rare sight this year, and we suppose there will be a fortunate lambing season as a consequence. Preparations for the lambing must soon be made, and as we have remarked before, if possible a new site must be chosen for the lambing yard. When the farmer is fortunate enough to possess a roomy stackyard it may be usefully employed, if one side has been cleared of stacks, as the site, particularly if some straw stacks have been placed in such positions as to give shelter from the north and north-east. Straw may also have been stacked in an old seed field with a view to a lamb pen, so as to get a sweet lair for the ewes. We do not think the same ground should be used for the pen at less interval than three years.

We do not like the use of foldyards for lambing, but they are useful to have as reserves to fly to in case disease breaks out in the pen proper. The small pens made with thatched hurdles should not be massed too closely together, as it will only tend to spread any infection. Shepherds are rather fond of having their pens handy, and is quite natural, for it saves running about, and his duties are always arduous.

In spite of the free use of cake and other feeding materials cattle are not doing very well. Butchers complain that they are killing very badly, and are often nearly approaching 8d. per lb. when weighed and reckoned up. Butter and eggs keep steady in price, but hens will soon begin to lay and markets will soon be full. Fowls are still plentiful and fairly cheap, and will remain so until game is all consumed.

PERMANENT IMPROVEMENTS.—Every farmer should try to make some permanent improvements on his farm each year. We have visited, says the "American Agriculturist," many good farms, but never yet saw one that did not have some places where a little labour or a little money expended would not either make it more productive, more convenient, or more pleasant as a farm, and more valuable if offered for sale.

DAIRY UTENSILS.—In one of the Year Books of the United States Department of Agriculture is a thoughtful article by Mr. R. A. Pearson on the selection of dairy utensils, on methods and appliances for cleaning and sterilising dairy utensils, on the care and cleaning of dairy rooms or buildings, clothing of operators, and the thousand and one things to be considered in successful dairy work. A great point made by the author is the importance of selecting only such dairy utensils as can be easily cleaned. He says, "Other things being equal, the more accessible the inside surface of an article for dairy use, the more valuable it is. Any utensil having corners or parts which cannot be reached with water and a brush or cloth should be avoided. A vessel should be discarded if it has sharp, angular corners, unless they are absolutely necessary, for they require too much attention. All dairy utensils should be of hard material and have smooth surfaces. Wooden pails should never be used for holding milk, as in the surface of the wood there are numberless small pores and fissures. The joints and rims should be made smooth, and the cracks entirely filled with solder. Cheap tinware is put together so carelessly that the joints are often rough and uneven, and little projecting points of solder make it difficult to move the cleaning cloth along the seams. Pails and other circular tin vessels should have but one seam on the side; better ones are made without a seam. In order to facilitate the cleaning of the outside of utensils, they should be so finished that every part can be easily reached by water and cloth. The outside of tinware should be finished as smoothly as the inside, and all wood apparatus should be carefully finished on the outside, being made smooth and having as few projecting nuts, rods, and braces as possible."—("American Cultivator.")

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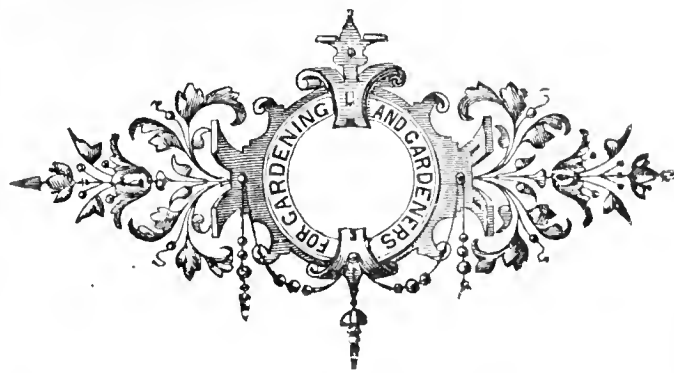
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Journal of Horticulture.

THURSDAY, FEBRUARY 1, 1900.

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BLOSSOM BUD FORMATION.

THE interesting communication on the {Rev. C. C. Ellison's garden at Bracebridge, near Lincoln (page 74), reminds me of days long gone by, when the garden and its trees were young. By the privilege of occasional visits to the garden thirty years ago, I learned some lessons from the practice and experiments of the active and earnest amateur. Active he appears to be still, it is a pleasure to learn, while his energy in fruit culture seems to have been lately re-invigorated.

If I were to say exactly what I used to think of Mr. Ellison in the old days it would be that he is energetic or nothing. In other words, if he undertook anything he did so with the full intention of succeeding. He appeared to devote his unquestionably strong brain and keen perceptive faculties to the solution of any particular problems that confronted him, and no research and labour were too great to deter him from arriving at the truth on whatever matter might be in question. If I were bound to name any one person who has impressed me more than any other, during a not short career, with a determination to "prove all things" on which doubts existed, that person would certainly be the founder, planter, and manager of the Manse garden at Bracebridge. I say "manager," for though Mr. Ellison has his gardener and assistants, and treats them after the manner of the thoroughbred English gentleman that he is, he still supervises all, and this in the happy way that makes it pleasurable to those whose duty it is to carry out his wishes.

In the description of Mr. Ellison's garden last week the interested visitor advised those who are not believers in pinching fruit trees to induce the formation of blossom buds to steer clear of Bracebridge Manse, or they would have the conceit taken out of them inside fifteen minutes. That I suspect is true, for it would be impossible to say how many thousands of blossom buds have been assisted to form there as the result of pinching the growths in the right way and at the proper time. Summer pruning, as ordinarily practised, is another matter, and has not the same effect. By systematically

No. 2679.—VOL. CII., OLD SERIES.

pinching the shoots of young trees root action is arrested, strong growth prevented, and a compact fruitful habit induced to fit the trees for certain positions in gardens. Even Peach and Morello Cherry trees can be made to produce clusters of blossom buds by pinching, and it would be strange indeed if Apples and Pears could not be brought into the same condition by similar means. The change is the simple effect of an arrestation of growth.

This arrestation can be brought about still more markedly in another way, with the result of a still greater and quicker increase in the number of blossom buds—namely, by checking the extension of the roots. This brings us more immediately to a case of “blossom bud formation.” This subject generally was discussed in the *Journal of Horticulture* some months ago, but left in a more or less nebulous state. Perhaps the narrative to follow will do something towards placing it on a concrete basis.

Once upon a time, which Mr. Ellison will recollect, the late Dr. Hogg visited his garden, but he may not be equally well aware that the present writer had a long and interesting discussion with the Doctor over the then young and promising trees. I know well, from experiments conducted for the purpose of acquiring information on the point, that a tree restricted in vigour by shoot pinching, and still more by root restriction, produced far more blossom in a given time over a given branch area than did a tree of the same variety of the same age and in the same kind of soil that was practically left to take its own course.

But though knowing that very well, there was a little matter that I did not know, and very much wanted to know. I have since found that there are men who really do know a great deal about gardening, but who do not yet know clearly what I was intent on extracting from the great pomologist. I tried to draw out of him what I wanted without betraying my own ignorance, but failed. At last, thinking if the opportunity was lost for enlightenment another of a like kind might never occur, courage born of despair came to the rescue, and the plunge was made in this way:—

“Doctor, I want to ask you a plain question on a definite point, but so simple it must be to you that I am afraid you will think me very ignorant, and I hardly like to proceed.”

“Oh, no,” was the reply; “I shall not think you ignorant, but should be inclined to think you were if you did not ask me anything you desired to know that I might be able to tell you.” That was something to be remembered, and the reply led me to ask scores of questions subsequently of whoever I thought could answer them. I was no longer afraid of seeming ignorant, and that has been a gain to me. But to proceed:—

“Well, Doctor, the simple question I want to ask is this: What is a blossom bud, and how is it formed?” A pause and penetrating look, then came this reply, slowly and thoughtfully:—

“You call that a simple question, do you? I call it a dual question, never before asked of me by a gardener. It is important, and I will answer according to my view of the matter.”

Then came the pronouncement, and it made the causes of certain effects clear that were before obscure.

“A blossom bud is an arrested and changed leaf or wood bud, and the embryo leaves are changed within it into floral organs, for all flowers are modifications of embryonic leaves, which if not arrested would develop into ordinary green leaves, such as you see around you.”

What a flood of light was thus thrown into a young inquiring mind. Then was seen more clearly than before why arrestation of vigour in the tree by pinching and root-pruning led to the increase in blossom buds.

Next followed an examination of buds. “Here,” I pointed out, “is one undoubtedly a blossom bud, and another unquestionably a leaf or wood bud; but what are these others? They appear to be neither the one nor the other; what will they become?”

“Oh,” was the rejoinder, “they are in the transition stage, and some may extend into growth, others be changed into blossom. Probably if this tree was nourished with liquid manure most of them would be forced into leaf-bearing shoots as they would if the branches were shortened; if that tree were taken up and replanted, thus stopping the sap pressure, the majority would be so far arrested as to bring about the change before mentioned, and the majority become blossom buds.”

All this was highly interesting, and now comes the sequel and the proof of the soundness of the Doctor’s “views.” I do not know whether the same subject was discussed between Mr. Ellison and his guest or not, but I do know that a number of young Pear trees of the same variety, all as like as trees could be in size, shape, stature, and

character, were growing side by side in the Manse garden. They were studded with buds in the transition stage—buds which no one could say with the least degree of certainty whether they would produce green leaves or floral leaves—blossom, when next summoned into activity. The owner of the trees, in accordance with his habit, decided to “prove” the influence of the arrestation of growth theory on the buds, by taking up and replanting every alternate tree. This was done in the autumn, and I saw the trees a week afterwards. The others were not disturbed.

Five months subsequently, or in the following April, I was invited to see the trees again, and was simply astounded. They afforded a sight and a lesson never to be forgotten. The transplanted trees, every one of them, were, so to say, “white” with blossom—studded most freely with trusses of flowers, not large, but in the aggregate decidedly imposing under the circumstances. A few of the unremoved trees had produced a cluster of flowers here and there, but several of them contained not a solitary truss, those buds that did not remain stationary, or apparently so, having extended into leaf-bearing shoots.

I am almost certain the facts were stated in the *Journal of Horticulture* at the time, but probably “buried” in an article. After a long and unavailing search for the record I some time ago wrote to Mr. Ellison on the subject of his experiment, and here is his reply:—

“Late in the sixties I grafted seventy-five Quince stocks with Beurré de Capiaumont, from which I raised seventy-three trees. Of these thirty-six were transplanted and thirty-five bore fruit in the following year. Of the thirty-seven not moved only one fruited. Seventy-two of these trees now form an avenue.”

No such direct and conclusive evidence on the acceleration of blossom buds by an arrestation of growth force, or reduction of sap pressure on certain buds, has, so far as I know, been published. It satisfies me at least that a tree does not, as some excellent men appear to think, give birth, so to say, to two distinct forms of buds—one predestined to produce shoots and green leaves, the other blossom and fruit, but only one kind is produced originally, and I strongly suspect the Doctor was right that a blossom bud is an arrested leaf or wood bud, nothing less and nothing more.

How far growth arrestation, either by shoot pinching or root shortening, is desirable for giving the most profitable results in fruit yielding, is not the question at issue, the facts stated having exclusive reference to blossom bud formation.—A LINCOLNSHIRE GARDENER.

CRYPTOMERIA JAPONICA.

THIS handsome Conifer is deserving of a place in any garden, being quick-growing, thoroughly hardy, and thriving in almost any kind of soil. In a young state especially it is a strong, vigorous-looking plant, and shows to advantage in practically any situation. A native of the mountains of China and Japan, it is largely cultivated in the latter country, especially for avenues, one in particular about fifty miles long being said to be planted almost entirely with this tree. In a wild state it forms a tree of pyramidal outline, 120 to 150 feet in height, but in this country the tallest specimens are probably not more than 50 feet high as yet.

Under cultivation it makes many spreading branches, which curve upwards at the ends, and which on old plants are bare for about half their length from the main stem. The leaves are closely set together on the branches, linear in shape, and sharply pointed. In cross section they show a somewhat four-sided outline, and are marked with two glaucous lines beneath. The cones are globular in form and prickly when ripe; and, though freely produced on comparatively young plants, do not always contain good seeds, which is probably due to bad weather during the time of fertilisation.

There are several varieties, of which the var. *elegans* (C. Veitchi) is undoubtedly the best, and which forms a remarkably handsome and useful garden plant, though it has been unfavourably reported on by some as rather tender, and instead of being a “thing of beauty” in the winter—when it is at its best—is said to be an eyesore. But it should always be remembered that Conifers—more especially those found outside of Europe—do not grow equally well in all places, a distance of a few miles making a great deal of difference in their habits, and no Conifer should be discarded until it has been thoroughly tested.

The plant in question was introduced from Japan in 1861, and has never been found in a wild state, probably being a sport originating under cultivation. It has a beautiful feathery appearance; linear, flattened leaves, much softer in texture than those of the type, and the secondary branches are short and slightly pendulous. The whole tree is of a bright green colour in the summer, but in winter it changes to a vivid bronzy crimson hue, the depth of colour, however, varying in different parts of the country, being much brighter in some places than in others.—C.



EPIDENDRUM WALLISIO-CILIARE SUPERBUM.

THOUGH the name given above is somewhat cumbersome, it has one distinct merit, inasmuch as it gives the parentage of the plant. It was shown at the Drill Hall on Tuesday, January 23rd, by Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, and received from the Orchid Committee of the Royal Horticultural Society a recommendation for a first-class certificate. The flower (fig. 20) is strikingly beautiful, and was probably as much admired as any Orchid in the hall on this occasion. The petals are of remarkable substance, and the colour is an intense deep yellow; the sepals are bright yellow. The splendid lip is about 1 inch across, and the colour is white on the outer portions, with showy bright purple in the centre. The spike carried five fully developed flowers.

PHALÆNOPSIS SCHILLERIANO-STUARTIANA.

On the same day as the *Epidendrum* was honoured, *Phalænopsis* made a wonderful display. The beauty and variety were alike charming, and the interest in the Orchid section would have been much less but for their presence. Two received special recognition from the Orchid Committee, and both were exhibited by Messrs. H. Low & Co., Bush Hill Park Nurseries. Of these we now illustrate *Phalænopsis Schilleriano-Stuartiana* (fig. 21), which received a first-class certificate. As a glance at the representation will prove it is of chastely delicate beauty. The broad petals are white with deep rose in the centre, as is the upper sepal. The lower sepals are white, with rose spots and suffusion, and the lip also is white with profuse rose spots.

DENDROBIUM WARDIANUM.

THE true type of *D. Wardianum* is a plant seldom seen nowadays, and though a very beautiful one, cannot compare with the handsome Orchid now sold under this name either for ease of culture or freedom of flowering. But ease of culture is here only a relative term, and though we can grow and flower our *Wardianums* finely while they last, they are not, unfortunately, by any means long lived under cultivation. What we know as *D. Wardianum* is a native of Burmah, and was discovered in the first place by Mr. Boxall, V.M.H., who sent it home to Messrs. Low & Co. about 1875.

Since then thousands of plants have been imported, and it is one of those Orchids that I should advise amateurs to purchase newly imported plants of in preference to any that have been under cultivation. The advantage is that these plants fresh from their native

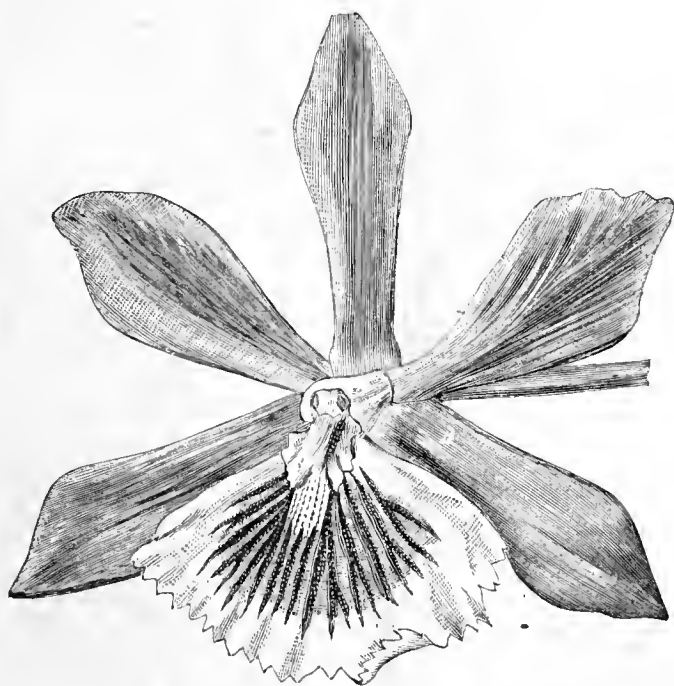


FIG. 20.—EPIDENDRUM WALLISIO-CILIARE SUPERBUM.

habitat, produce very beautifully coloured flowers for the first season or so. Perhaps, finer flowers were never seen than those on plants exhibited at various centres last season on the imported stem, but probably many of these have not come up to the expectations of their owner this season.

But even in its poorer forms it is a chaste looking and lovely Orchid, and its popularity is not surprising. The original *D. Wardianum* is a much slenderer plant, that bears smaller flowers,

though these are perhaps even more brightly coloured. This is much like a small *D. Falconeri*, and was at first thought to be a variety of that species.

ODONTOGLOSSUM CRISPUM VIRGINALE.

From one of my correspondents comes a very fine flower of this chaste variety, broad petalled, prettily crisped on the margin, and altogether one of the finest of this type I have seen. Yet, although the plant he admits is weak, and the spike a large one, it has been allowed to remain on until the flowers commenced to fade. It is usually amateurs who do this kind of thing, many experienced growers removing the flowers immediately a really good form is noted on a newly imported plant for obvious reasons. It is a pity to farther weaken a valuable plant for the sake of seeing the flowers a week or so longer, and thereby ruin its chances for another year. *O. c. virginale* is not a particularly rare variety, but such good forms as this are uncommon.

DENDROBIUM CAPILLIPES.

This charming little plant has always been a favourite with me, and no matter who grows and flowers it well they are sure to be pleased with the masses of yellow blossoms so freely produced. Although one of the dwarfs of the genus it is as showy as many larger species,

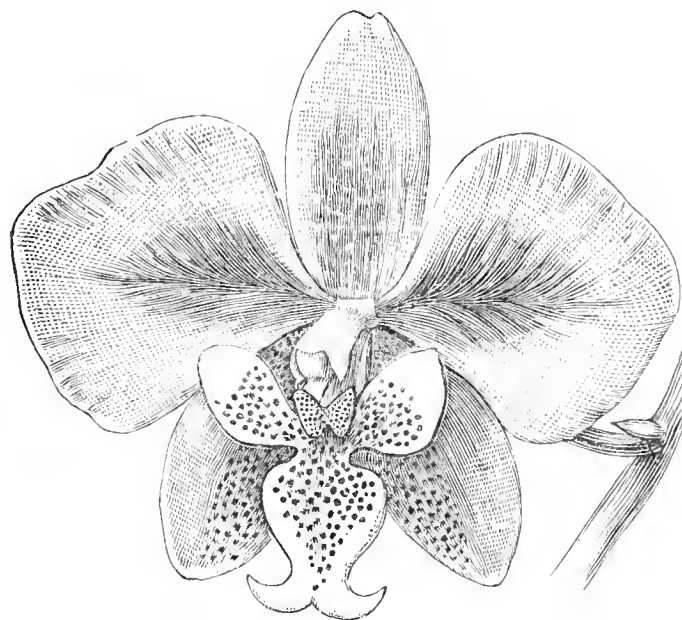


FIG. 21.—PHALÆNOPSIS SCHILLERIANO-STUARTIANA.

and given a good firm hold in the lome of its adoption little trouble will be found in growing it. Of course such a plant will not do in a large pot with much compost about it, but in small pans or especially on Tree Fern stems it flourishes under the usual treatment accorded to *Dendrobiums*. A peculiarity is the very fine hair-like stems of the flowers from which the species takes its name.

ONCIDIUM HARRISONIANUM.

Many growers object to this species on the score of colour, which they do not consider as showy as many others, but the fine old gold tint in my opinion is as attractive as anything we have in dwarf Orchids. It likes a light and rather cool house, such as suits *Sophranitis*, and may be grown in small receptacles, giving a compost of equal parts of peat fibre and moss. It has glaucous leaves and pseudobulbs that distinguish it from any other kind, and is a native of Brazil.—H. R. R.

LONDON GARDENS OVER FIFTY YEARS.

No. 18.

WE have already remarked that though Osborn's was generally called the Fulham Nursery, the same name seems to have been sometimes given to another between Walham Green and Fulham. This was really at Percy Cross, a modern name which has much puzzled investigators. It is not likely to be altered now, but *Percy* could not have been its original spelling. Some argue it was "Purser's Cross," because a ship's purser was buried at the cross roads, who was a suicide or had committed a murder. Others uphold "Parson's Cross," asserting that hereabout stood a cross meant to guide people to the parsonage. We must leave the point doubtful. The Percy Cross Nursery was well known for many years, Mr. Dancer being a large grower of evergreens and fruit trees. In the time of Cromwell we read of one *Daunsar*, who was a benefactor to Fulham and Hammer-smith; apparently the Dancers were first farmers, then market gardeners, afterwards nurserymen. Besides this nursery the late Mr. Dancer had extensive grounds at Chiswick, near the gardens of the Royal Horticultural Society and the Duke of Devonshire's mansion.

Many went to Percy Cross Nursery to examine some remarkable specimens of *Salisburia adiantifolia*, planted early in the reign of George III., and other curious exotic trees. By an unfortunate accident a fire broke out in October, 1876, that entirely destroyed the storerooms and packing sheds, with a quantity of seeds in which Mr. Dancer then did a large business. About three years afterwards the growing stock of trees and shrubs was sold and the land cleared for building.

Ravensworth House, Percy Cross, has a memorable garden; commenced by Mr. Ord in 1756, it had some things visitors came far to see. Thus, there was in the kitchen garden a Moss Rose which had been repeatedly layered, till it covered a circumference of 45 feet. Amongst the trees was a Lombardy Poplar 10 feet in girth, and reckoned to be 120 feet high, also a *Juglans nigra* 60 feet high, raised from seed. The firm of J. Veitch & Sons have ground at Southfields, near Fulham, but they are not able to say whether it was formerly a part of the nursery of the famous Reach's, father and son. Reach, senior, is stated to have been an early grower of the *Auricula* and the *Chrysanthemum*; he had thirty-three children by two wives, yet reached the advanced age of ninety-nine! Some of the fields about Fulham used to have quite an aromatic fragrance in the summer season, as various herbs, Thyme, Basil, Sage, and Marjoram, were largely grown for Covent Garden Market.

Loudon, one of the very notable writers on horticulture belonging to the earlier years of this century, is not given to exaggeration generally, but he may have over-estimated the importance of the Vineyard Nursery at Hammersmith. He commences a brief account of it with the remark that it was certainly the first nursery in Britain, or, it might even be said, in the world, which we can scarcely admit, though allowing it occupied a place amongst a select few. Nor, even to this day, has it lost reputation, numerous as are its rivals of younger date, though the nursery does not cover the ground at Hammersmith it formerly did. What its original extent was seems to be uncertain now, but before it became a nursery the whole or a part of the land was occupied as a vineyard, and considerable quantities of wine were made there in favourable seasons.

The situation attracted the notice of two young Scotchmen, Kennedy and Lee, in their walks about the west of London, and they obtained the place to convert it to a nursery garden. (Here, again, we have an instance of the indebtedness of horticulturists to North Britain.) Lee came south to an engagement in the Chelsea Physic Garden under Miller, afterwards he became gardener to the Duke of Argyll at Whitton. About that time he got to know young Kennedy, then employed at Chiswick in Lord Bolton's establishment. The would-be wits of the reign of George I. called this Duke a "tree monger" because of the exertions he made to obtain varieties of trees from abroad. With James Lee it was the grand object of his life to obtain exotics from all attainable lands; also he had a hearty desire to promote and simplify the study of botany. He died in 1795, but it might truly be said his works follow him to the present time.

Probably it was about 130 years ago, soon after George III. became monarch, that the Royal Vineyard Nursery was established. In 1760 Lee published his important and useful "Introduction to Botany," designed to explain the Linnean system, illustrated, which passed through several editions. Though superseded now by the general adoption of De Candolle's natural system, it helped the progress of botany, and it made Lee acquainted with most of the first-class botanists of Europe. It seems likely this was written before he entered upon the responsibilities of business; later he issued a catalogue of exotics grown at his nursery. Lee was also an earnest student of shells, insects, and fossils, collecting all these. Many of them were drawn by his daughter Anne, besides various rare plants. The story of his having discovered the first *Fuchsia coccinea* brought to Britain, in a sailor's house at Wapping in 1788, has been often printed and often questioned, but I find that it is authenticated. Roses, too, were even in his time a specialty of the nursery, where he had the China varieties before anyone else. He lived till 1795, surviving Kennedy. An excellent portrait and sketch is in the *Journal* of January 25th, 1877.

After the decease of the founders their surviving sons carried on the nursery till 1818, when they dissolved partnership, and it became the sole property of James Lee, jun. He was followed by John Lee, who retired in 1877, having been actively engaged in the nursery for fifty-six years, and it entered upon a new era, being carried on by the fourth generation of the family, under the title of Charles Lee & Son. About the middle of this century the Royal Vineyard Nursery passed through a period of depression, from which it gradually recovered, and several new houses of improved structure were erected at Hammersmith by Mr. C. Lee, though the open ground has undergone diminution. Grapes still receive due attention on the spot which has so long been famous for them. Additional nurseries of some extent have been maintained successfully many years at Ealing, Feltham, and Isleworth.

If it be the fact that the first English Dahlias were planted at

Holland House, having been sent there in mistake for Artichokes, it is likely Lee was favoured with an early sight of them. They used to put the tubers in the driest road scrapings they could get, and kept them under glass, thinking the plants required warmth in our climate. It is impossible to enumerate the good things which have come from this nursery in recent years. Here was raised *Juniperus virginiana elegans* in 1869, a pleasing variety of Red Cedar. Notable also was the Weeping Black Bigarreau Cherry, with large fine flavoured fruit, which ripened there in 1878 for the first time in Britain.

Hammersmith has enormously increased its population during the half century, rising from 18,000 to 104,000. Hence it has spread largely towards Kensington and Fulham. Streets, factories, brick-fields, cemeteries now occupy much of the space that was garden ground in 1850. One calls to mind the names of Broadbent, Evans, Humphries, Matyear, Smith, and others, who used to send many tons of vegetables to market. Even yet, I believe, Mr. C. Bagley, one of a well-known race of gardeners, has land near the Packhorse and Talbot, a quaint old sign in the Hammersmith Road, reminding us of the time when much luggage went by packhorses, a spotted dog or talbot trotting in front.

But though market gardens and nurseries have diminished, it cannot be said that Fulham and Hammersmith are badly off for open spaces. 'Tis true old greens have sometimes become mere names—Starch and Walham Greens, for instance—but new gardens or recreation grounds have appeared. Ravenscourt Park, once renowned for its trees and flowers while a private residence, is a space of 32 acres, greatly frequented. It is one of several parks under the London County Council, which have a botanical garden containing collections of plants arranged in natural orders, and a guide is to be printed for the benefit of teachers or students. Eelbrook Common of 14 acres is now a park; then close to the river we have the Bishop's Park at Fulham of 12 acres, and adjacent thereto another space of 9 acres free to the public.—J. R. S. C.

SMALL DECORATIVE FERNS.

THOSE who have house furnishing with plant or table decoration know how useful small healthy Ferns are for filling up and to enhance the beauty of flowering plants used. Unfortunately the same species are in many cases repeatedly propagated, and one rather wearies of them. The pretty *Pteris serrulata*, in its many forms, is one of the best of all for the purpose; *Pteris tremula* is also excellent in every size, from the largest to the smallest.

This has led to their very common use, but there are many others not so frequently seen that would make a pleasing variety. Some of these, it is true, are by no means so easy to propagate as the well-known forms named above; and others, unfortunately, do not freely reproduce themselves from spores, but where there is a demand, and they are likely to be admired, the gardener may well stretch a point, and take a little trouble in the matter. The pretty *Cheilanthes elegans* ought to be much more grown, for, though it demands careful treatment, no difficulty will be found in freely propagating it by division. And here it may be well to note that this and similar habited Ferns look far prettier in small plants where the individual shape of each plant can be seen, than when these grow larger and thicker, and consequently become confused and crowded.

How charming, too, and how easily grown, are some of the *Pellæas* in a small state! We have *P. hastata* and *P. rotundifolia* that both thrive in quite a cool house, and the genus contains a large number of such. In the *Gymnogrammas* again there are several striking and easily grown forms. Those of the *schizophylla* section are often thought to be difficult to cultivate, but there was never a greater mistake. All they want is sufficient warmth and moisture with room, so that the tender fronds may not be rubbed. *G. s. gloriosa*, that beautiful variety so well known now in large and medium sized plants, is quite a gem in small pots just as the young fronds are creeping over the side, and the first young plantlets are appearing on their end. These latter, of course, afford the readiest means of propagation in this case.

Many of the *Adiantums* are largely grown already by private gardeners, but some of these even are much neglected. Any number, for instance, of the ordinary type of *A. capillus Veneris* may be seen; but how often do we see the prettily cut forms, such as *A. c. V. fissum*? Yet this, and many others, are as easily propagated and grown as the type, and with it would make a charming variety. Some of the broader leaved forms, too, as *A. c. V. rotundifolium* and *magnificum*, are hardly second to *A. Farleyense* for beauty. Raising these, and others, from spores would make a delightful hobby for anyone with the time to spare, for one never knows quite what is coming, and as the various types begin to develop they are wonderfully interesting.

Pteris scaberula would make a very pretty plant in a small state, but its propagation is so difficult without the best of convenience that

it is hardly to be recommended for the purpose in view. It may be divided, and so increased, but not to a small state, or it will be difficult to get the divisions to start. But it stands well, and so does *P. sagittæfolia*, a charming Fern, with foliage like that of our native Arrowhead, but smaller, and of a deeper green. Into culture there is hardly space to go here, and of course the list could be greatly lengthened; but I may say that with most of those enumerated the present is an excellent time to commence working up a stock.—H. RICHARDS.

FRUIT PRODUCTION.

WHEN at the last Drill Hall meeting of the R.H.S. Mr. Morris of Sandhurst somewhat oratorically invited the Fruit Committee to tell him where he could obtain the supplies of soft fruits he wished to have for drying according to the sample of Plums submitted, and thus put on to the market in competition with dried Californian and other fruit, he seemed to think it was only needful for him to ask and he would immediately receive. But those members of the Fruit Committee who know anything about fruit supplies could render to Mr. Morris no assistance. That gentleman said that dried fruit of the best quality, fitted to compete with imported fruit of similar character, must be retailed at 3½d. a lb., and that the price paid to the grower, inclusive of cost of transit to the place of manufacture, could not exceed 1d. a lb. That proposal certainly presented nothing of a tempting nature, and in no way offered better prices than were already obtainable in any market, whilst much below average prices.

GLUTS OF PLUMS.

That Plums should be the fruit most in request was natural, as these are stone fruits usually produced in the greatest abundance, and most cheaply, and are on the whole the best suited for drying. There seems to be a common belief prevailing that Plum crops are annually so heavy that gluts commonly result. It was said at the table that such crops as led to gluts did not occur oftener than once in seven years. If anyone embarking capital in Plum drying had to trust to getting fruit at a remunerative rate, only so seldom as that, the investment would prove to be a poor one indeed. Certainly we may get what may be described as heavy crops of Plums oftener, but as was also said, our market arrangements and means of transit have improved so much that good fruit, instead of being concentrated on to one market now finds its way all over the kingdom, and the heavy crop simply suffices to meet the nation's ordinary requirements for fresh fruit without leaving any surplus to be purchased cheaply for drying.

THE SURPLUS FRUIT.

The drying process may be said to be an admirable means of utilising all that surplus fruit of a country for which there is no other demand. That may be true of some continental, as well as of American countries, but it is not, and it is doubtful if it ever can be, true of Great Britain. Here we have to feed with fruit one of the densest and greatest populations of the globe, and that of a people essentially fruit-loving. The demand for all descriptions of fresh fruit in season is truly enormous, and for the best there is always a good sale. It is the inferior that hangs and becomes at any time a drug. Poor or inferior fruit never did pay to grow and never will.

SUPPLY AND DEMAND.

But outside of the requirements of the population for fresh fruit, there is also the huge demand existing for fruit for preserving as jam and jelly, and for bottling. We have seen of late, through police court prosecutions, how great are the quantities imported, as fresh as it well can be, from abroad for this purpose; and through these cases we are enabled to see how deficient are our own supplies to meet all existing demands. Were there introduced into the kingdom another method of preserving fruit in the form of drying, that abstracted some 100 tons of our present fruit supplies, the effect would be, of course, considerably enhanced market price for all fruit; but that would prove a rock on which fruit drying as an investment would eventually split, as such manufacture to be successful must be of purchased fruit at the lowest possible price, that it may contend in our own markets with the excellent samples of dried fruit from other countries.

HOW TO INCREASE THE YIELD.

After all, the question that needs consideration in relation to these matters is as to how far we can in a remunerative sense extend our present comparatively too small fruit supplies. Granted that those directions in which demands now exist will never fail, granted also that other forms of demand will arise, there is still the more important fact that the population increases at an enormous rate annually, and that such increase of necessity requires an increased supply. There is even more, because all experience points to the conclusion that beyond increase of population there is an increased demand being made for fruit in its various forms and phases by the existing population,

because the taste for fruit grows on them. There is no public taste in relation to food more healthy, more desirable, hence apart from the profitable aspects of fruit culture there are supporting it important hygienic ones that do not apply to every form of popular food.

FUTURE REQUIREMENTS.

Looking at these facts, then, the question naturally arises, What are we as a nation doing towards providing the supply of fruit for our people that not only now exists but is so rapidly growing? There is no subject in connection with economical horticulture so important as this is. It is a problem that needs to be solved. Very many persons would, perhaps, be startled to learn that there is little hope of meeting our future needs unless we put down annually some 40 to 50,000 acres of land with fruit. That may seem astonishing, but utilising an old exclamation, and remembering our vast nation of consumers may it not be said, What would its produce be amongst so many?

WORN-OUT ORCHARDS.

In our estimates of fruit areas we take little account of the considerable area of fruit land that is annually being converted to other purposes, or has become old and worthless. Practically there are many thousands of acres of land now containing fruit, and reckoned as such in Government returns, that, so far as the existing needs of a fruit supply are concerned, are absolutely worthless. Poor fruit is of no good to anyone; neither grower, dealer, nor consumer benefits by it. Apart from the poor prices it brings, so much of it wastes or decays that it is never remunerative. Generally good, clean, well grown, well finished fruit represents fully three times the value of poor fruit; yet it is not much more costly to grow, and is, as a rule, much less expensive to gather. If good fruit will not pay to grow poor fruit never will, hence the primary object of all who embark in fruit culture in any way must be to grow the best only, and to grow it well.

WHO WILL BE THE PLANTERS?

How are new breadths to be laid down? There seem to be two methods of getting this great necessity accomplished, and apparently only these. One is by the landowners themselves setting apart considerable areas of their estates and planting them under experienced judgment, and the other is by capitalists purchasing land or hiring it on long lease, and planting it. There is no prospect apparently, at least some previous experience in that direction does not seem hopeful, that fruit culture, however extensively conducted, will ever pay under the control of a limited liability company. The one great element of success when land is good and well situated, and then well planted, must be found in the managing head, and such experienced men are just now hard to find. A high authority said the other day, "Were I asked to supply a man capable of efficiently managing a large fruit farm, not only cultivating it well, but also of profitably marketing the crop, I could not do it, for I know of none such." Certainly of good gardeners we have plenty, but of managers of fruit farms we have very few.

WHAT WE REQUIRE.

Practically we sadly need a training school for such persons, and we have none. At present a pupil who wishes to become an expert in fruit culture and in marketing must pick up his information as best he can through a nursery, if he can get into a good one, and there rough it indeed; or he may get into an extensive market garden, and acquire some rough knowledge in a rather coarse and almost repellant way. But of real systematic knowledge and instruction he will gain little. Of the best descriptions of fruits, whether in kinds or varieties, of planting and treating the trees and bushes, of pruning and properly manuring them, of treating them for preservation from fungoid and insect pests, of best methods of gathering the fruits, or of grading and of packing finally for market he will learn nothing systematic. He may certainly obtain a good deal of knowledge of the hand to mouth order, but it has all the same been rough and tumble training.

BOOK LEARNING *versus* PRACTICAL WORK.

Now, rather than bother our heads as we yet do so much by cramming from books, to help to create a number of horticultural theorists, whose knowledge needs maturing with garden experience, what we really want is a great institution devoted almost absolutely to fruit culture from the market point of view, where young men could have a course of not less than three years training, specially to fit them to be wise fruit farm managers. Such an institution should have its 200 acres of fruit ground. It should have first-class practical instructors. It should teach students literally everything to be taught in relation to fruit culture, to fruit disposal, preserving, bottling, drying, and the entire round of methods of utilisation. This seems no doubt a big thing, but if not furnished whence is to come our future fruit growers? and without these of what use to plant fruit farms?—A. D.



NOTES ON MARÉCHAL NIEL.

WHEN grown under glass the pruning of this fine Rose is a matter of great importance, and cultivators are somewhat divided as to the better way. Many cut back the growths closely each year directly after the flowering. I have adopted this plan for a number of years with considerable success, but the sight of several plants created in some cases by close pruning, and in others by very moderate cutting, has rather modified my views in regard to the former practice.

The Rose trees in question fill a good sized span-roofed greenhouse, and are planted on each side, wires being fixed to train the growths near the glass. They were planted two years back, the object being the supply of blooms for sale. All the plants are budded on Briar stocks from cuttings, and are therefore dwarfs. The first season after planting a fair amount of growth was made, but the shoots were not strikingly vigorous, and in the spring of last year a few dozens of blooms were gathered of good colour and quality. After this came the test as to pruning, which is the principal object of these notes. The owner had been advised to cut hard back all the growths throughout the house. Not caring to undertake such a risk, as he thought, he used the knife in the determined way indicated on some half-dozen of the plants. With the rest he simply removed weakly growths and slightly shortened the longest rods.

That it was wise not to prune closely the present appearance of the plants or trees fully proves. The half-dozen were a considerable time in starting into new growth, and the result of the last summer's crop of shoots are a few short weakly-looking rods that cannot possibly bear high-class flowers a month or two hence. The majority, however, are magnificent in strength and health. The trees have furnished long clean rods that have run to the top of the house on both sides with leaves, large, deep green, and leathery. The "eyes" look plump, and nothing save bad management can now prevent an abundant harvest of fine blossoms.

Forcing is detrimental to Maréchal Niel Rose. At least the blooms lose in colour and substance when much fire heat is applied. A little may be necessary to keep away frost, because even in a cool greenhouse the growth buds seem anxious to move at the turn of the year. Little heat and little air are advisable; the latter, when it takes the form of cold draughts, is certain to bring mildew and green fly.

I shall watch the house of Roses seen recently for the future, because I have always considered Maréchal Niel on dwarfs as short lived. My favourite stock is the standard Briar. Budded on this one has noticed a less rampant growth; this is firm instead of gross. Soft wood favours canker. Such, at least, has appeared to me, so that when one hears of a comparatively large space being filled with the favoured Rose in a short space of time, one expects to hear in a season or two that the plant has died. I once had a specimen that bore 800 fine blooms two years after planting, and after the crop had been gathered the tree died in some unaccountable way.

Near the spot where I write is a very fine specimen trained to the south-east side of a dwelling house. The position is high, and the soil dry and of a sandy nature. This tree is about five years old, and last year bore really grand blossoms. The leaves now present a most healthy picture, the frost we have had not being severe enough to harm them. There are many spots in gardens where this beautiful Rose would do well if tried. When once a favourable position has been obtained it is glorious as a climber, and gives practically no trouble beyond nailing in the shoots. Little pruning in the case of outside specimens is required, and although it is not a continuous flowering variety, I fancy most persons are more delighted with one perfect blossom of Maréchal Niel than a handful of almost any other Rose that is cultivated.—H. S.

HOW FERTILISERS AFFECT POTATOES.—Three years' test at the Virginia experimental station seems to warrant the conclusion that Potatoes grown without fertilisers contain the greatest amount of dry matter. The addition of fertiliser tends to diminish the dry matter in proportion to the amount applied. Potatoes grown with sulphate of potash contain more dry matter than where muriate was used. The ash, says an American contemporary, did not appear to be affected to any appreciable extent, and the same is true of starch. Neither the kind nor the amount of fertiliser seemed to have any effect upon the percentage of nitrogen, phosphoric acid, and potash, but the percentage of chlorine was considerably higher when muriate of potash was used and increased with the amount applied.

SPRAYING FRUIT TREES WITH SULPHATE OF COPPER.

ON page 6 "Y. B. A. Z." says he proposes to give his Plum and Pear trees a double syringing of sulphate of copper (1 lb. to 25 gallons of water) whilst resting, and again when the buds begin to swell, in order to prevent the attacks of brown rot fungus, *Monilia fructigena*; also in the hope that the Pear midge, *Diplosis pyrivora*, may find the treatment disagreeable.

May I suggest to your esteemed correspondent the omission of the second dressing, "when the buds begin to swell," on account of its rather dangerous nature to those buds which may be sufficiently open in the scales to allow the solution to enter. The solution of copper sulphate, at a strength of 1 part in 250 parts water, 1 lb. to 25 gallons, acts disastrously on developing as well as developed growths, whether leafy or floral, the strength quoted being only permissible before any growth has developed.

If the solution is used at all after the buds start, it should be at a strength of 1 part sulphate of copper in 8000 parts water, or 1 lb. to 800 gallons; if Paris green be added for the Pear midge and similar "gentry," 1 part in 12½ parts of the copper sulphate solution for Plum, and 1 part in 20 parts for Apple and Pear trees; or 1 lb. Paris green to 200 gallons of copper sulphate solution for Plum, and 1 lb. Paris green to 320 gallons of sulphate of copper solution for Apple and Pear trees. There would then be a chance of killing two birds with one stone—the parasitic fungi, and the predatory insects or their larvæ.

But in order to grapple successfully with parasites and predatory insects we must understand something of their life histories, and of the two pests named by our friend, that of the brown rot fungus, *Monilia fructigena*, has not been completely worked out. All we know is the conidial condition and the sclerotia stage, the perfect or ascophore form being unknown, or at least imperfectly determined. The fungus, however, passes the winter in the sclerotia stage, known as *Sclerotinia fructigena*, consisting of small, black, wrinkled bodies, mostly concentrically arranged on affected fruits, especially fine, on Doyenné du Comice Pears, and from these spring short flask-shaped branches or hyphæ, bearing globose conidia or spores, which give rise to the disease anew.

The diseased fruits bear on their affected surfaces, sometimes in the core cavity, dense tomentose tufts, often growing in circles, white, then dingy ochraceous red. This is *Monilia fructigena*—hyphæ branched bearing elliptical spores, usually in chains, and in this matrix the small black bodies, *Sclerotinia fructigena* form, practically wet, drought, and frost proof. I do not exactly, but very nearly, know they are also poison proof, for the way the simple solution of copper sulphate acts is by abiding on the sclerotia, and preventing the growth from these of young mycelium, consequently the development of spores is prevented.

It is well to remember that the brown rot fungus also attacks the leaves, though less frequently than the fruits, hence the winter spraying may be useful in acting upon any sclerotia on the trees or ground, otherwise the spraying whilst the trees and fungus are dormant can have little effect where cleanly culture—the destruction of all diseased fruits and leaves—is practised, for it is the sclerotia that constitutes the danger of infection.

I cannot grasp the idea, much less the fact of summer spores surviving the winter, except on living tissues in hyphæ form, or on diseased fruits in the fruit room, and after being thrown on the rubbish heap, to produce conidia or summer spores in the spring. I think no one better than "Y. B. A. Z." will fail to recognise the importance of burning all affected fruits as early as possible, then winter spray the trees with simple solution of sulphate of copper, though, as before stated, it may not do much, if any good, but it certainly will kill any lingering *Monilia fructigena* spores, and there is no harm in the application.

For the summer treatment I should depend on dilute Bordeaux mixture, never using it stronger than one part of copper sulphate to 125 parts water, and of course one part lime. This 1 lb. copper sulphate and 1 lb. freshly burned lime in 12½ gallons of water is quite strong enough for use on Apple, Cherry, Pear, and Plum trees; and with an ounce of Paris green paste added to the mixture for Plum trees, or three-quarter ounce for Apple and Pear trees, is as good as anything for fungi and biting insects. Spray first before the blossoms open, then as soon as the fruit is well formed spray again, and repeat the application twice later at intervals of a fortnight if wet, or three weeks if dry weather prevail.

For the Pear midge I should dress the ground with a mixture of kainit and bone superphosphate in equal parts, 7 lbs. per rod, and point in, and in spring when growth begins use 1½ lb., crushed fine, nitrate of soda per rod, and leave for the rains to wash in. Another thing, just when the buds commence swelling spray the trees with tar water—half a pound of gas tar boiled for half an hour in 2 gallons of water, and then dilute to 50 gallons. It may deter the Pear midge from visiting the trees from neighbouring orchards or gardens, for with the application of kainit and superphosphate now, and the nitrate of soda later, I do not expect any will rise from "Y. B. A. Z.'s" grounds if the mixture extend quite a yard beyond the spread of the branches of infested trees.—G. ABBEY.

THE SWEET PEA CONFERENCE.

As an admirer for many years of Sweet Peas, and knowing well their utility as a garden flower, I feel peculiar interest in the suggested Show and Conference to be held. As a cultivator and a keen observer of the varieties, and, I might say, the multitude of names that is so fast growing, I welcome the proposed Conference as a means of classification of those sorts which are too much alike to have any other but ill effect upon those we are all wishful to assist—beginners. It cannot be denied that names are increasing faster than are the actual varieties; at least, if some are not identical they much too nearly resemble each other to be either useful or necessary. A thorough system of classification should do much to make plain which are desirable varieties to grow.

An exhibition confined to this flower only will show us the best methods of staging them for effect. At the present time there are many styles of arrangement which are hardly worthy of emulation. It is the best, and the best only, that we require to see.—E. MOLYNEUX.

VINES IN THE OPEN.

In the editorial paragraph on page 54, in which an article from the "Globe" is quoted, there is a reference to the culture of Grape Vines on the walls and gables of cottages and farmhouses in the south of England. I should like to add that this phase of Vine culture is by no means an uninteresting feature in some of the rural districts of Kent, and though profit is probably not considered, there is something quaint and homely about the Grape Vine clustering over the door of a rustic dwelling, and apparently doing its best to obscure the windows. Only last September I passed a cottage, the front of which was entirely furnished with a Grape Vine, on which numbers of ripe bunches were hanging.

The grower evidently knew something of the rudiments of Vine culture, for I observed that the bunches had been thinned, and the black berries were of fair size and colour. The laterals had also been stopped in the orthodox manner; and closer examination disclosed the fact that a number of canes had been trained perpendicularly up the wall, and the spurs pruned closely. Treated in this way, and with the advantages of a very favourable summer, the fruit was of a highly creditable character, and to me it was an illustration of what the Grape Vine is capable of doing, even out of doors in this country, under certain conditions. I was not able to learn from the grower the name of the variety. It was there when he took the house, in a semi-wild state, and that was all he knew.

Even in wild unrestrained luxuriance Vines on house walls have something attractive about them, and I have often seen them heavily cropped with small crowded berries, but where cultural skill is brought to bear on them, and the season is favourable, useful Grapes can be grown in suitable situations in the southern counties. This does not alter the fact that to attempt to grow Vines outdoors as a commercial enterprise would only be courting failure.—KENTISH MAN.

HORTICULTURAL EXAMINATIONS.

THE paper recently read by Mr. George Gordon at the Horticultural Club on this subject is full of interest, and certainly strikes the keynote to another tune, which, by the re-arrangement of a few chords, will be more acceptable and harmonious to the gardening craft. For over twenty years I have been intimately connected, either as a candidate or examiner, with practical gardening, and also with examinations of various kinds, and since the inauguration of the R.H.S. examinations I have been preparing young gardeners as candidates. The ideal of an examination should be to test the candidate's knowledge of the subject, and the more practical the test the more satisfactory the results to everyone concerned. The answers to a few questions form no criterion of knowledge and ability, therefore it is evident some other system will have to be introduced if the confidence of gardeners is to be obtained and maintained, and if a certificate is to be of any real value to the apprentice or journeyman.

Mr. Gordon's suggestion of an examination scheme is worthy of serious consideration, for when I have scanned the results of the R.H.S. exams, and found thoroughly practical men with many years' experience in the third class, whilst boys and girls in their teens, without any practical experience worth mentioning, are in the second and first class, I have been constrained to think it was time the examinations should be placed and worked on a different system, so as to really meet the requirements of gardeners; but by no means should they be allowed to fall through.—S. H.

It must be over thirty-five years since I had to pass examinations, though I had a good many to go through even in those days. Perhaps the rising generation is more gifted and requires sterner trials, but if those eight questions on page 79 of the Journal are a fair sample of the sixteen in a recent horticultural examination, I should call it a very stiff paper.

One or two of the questions may be fairly easy, but to answer, in a really satisfactory way, eight such in two and a half hours,

seems to me a very hard task. Five or six years ago I essayed to answer one of those questions, and did so, though not quite to my satisfaction. It took me about six months. The immense amount of condensation required could only be learnt by "cramming," at least I should think so, but I have no personal experience of that process. Condensation is a literary art, requiring time, not only in the learning, but also in the carrying out. Demosthenes, the great orator, being once longer than usual in meditation before one of his speeches, was asked it is said, the reason of it. "I am thinking," he replied, "how I can shorten what I have to say to the Athenians."

To "rattle away" is comparatively easy if you know your subject, but to "boil it down" must take time. I am sincerely thankful no such two and a half hours task falls now to my lot.—W. R. RAILLUM.

APPLES AND IRON PIPES SPLITTING BY FROST.

My experience is precisely the same as that of "W. N.," page 71. I have had Apples frozen quite hard in a loft in which fruit was kept; Onions also, and both when moved about rattled like stones. When the thaw came numbers of the Apples split, in fact most of them were spoiled. The frost was very severe, the thermometer registering below zero in the open. The Onions were not injured. The Apples were not burst by the "thaw," but by the frost. There is no expansion of water when the ice melts, but slightly the reverse, and the fluid then escapes through the fissures produced, it may be, several days, or, as in the great frost of 1895, weeks before, though of course there could be no trickling so long as the water remained solid.

That water "swells" when warmed many gardeners know by its rising in and sometimes overflowing from the boiler feed cisterns when these are not as they ought to be, the warmer molecules of the water rising to the surface, but just because of the circulation and upward rise in the feed cistern the pipes cannot burst. But they can and do when circulation ceases and the water with which they are filled is changed into ice.

Some years ago a gardener was forbidden to use any fuel to exclude frost from a range of Peach houses during the winter. He was not told to empty the pipes, and a severe and prolonged frost occurring, hundreds of feet in length were raised and split. The mischief was not done at the time of the thaw, as has been said occurs, but by the tremendous pressure consequent on the expansion of the water during its conversion into ice.—AN OLD GARDENER.

I WILL be serious; and, indeed, my humour did not seek to dispute the patent fact that heat expands water. But I protest against Mr. Richards persisting in the error of his ways and against his endeavour to get out of a tight place by saying he was dealing with water only as a liquid. Now Mr. Richards applies the theory of heat expansion to demonstrate the possibility of thaw bursting pipes; he, perhaps, does not know that water is at its coldest when thawing—colder even than ice. How can any theory of heat expansion account for a substance bursting its containing vessel at its coldest? Melting ice absorbs heat, and thawing water is therefore below freezing point. If this were not so, the whole frozen surface of a lake would change into water immediately the thermometer stood above freezing point. Mr. Richards would then find skating an even more dangerous amusement than freezing bottles—and not so slow.

Perhaps the phenomenon of thaw bursting pipes observed by Mr. Richards may be explained by the fact that ice does not leak, and the fracture caused by the ice is not noticed until the thaw, when the escaping water draws attention to the breakage. At the same time I quite admit the possibility of heat applied to frozen pipes bursting them, not owing to the expansion of the water, but to the unequal expansion of the pipe, as hot water cracks a cold tumbler.—RET RAILLUM.

DECADENCE IN WALL TREES.

"A. N. O.," on page 52, is a little severe upon some people; scarcely gardeners one thinks. What a "modern go-ahead" is seems somewhat incomprehensible, but that he is a man in a hurry can readily be understood, and, of course, with trees "3 or 4 feet above the wall," he is not a gardener. That he may be called so is another matter and another tale. A gardener can scarcely listen to the wail of wall tree woe without feeling that it is a slur on his vocation. Still, the fact remains that neglected trees are not only frequently seen, but in the suburbs of a big city this neglect amounts to an epidemic. The cause is not far to seek, but it would take longer to detail than time and space now permit. It can, however, readily be given if desired; but so far as a cure is concerned, *cui bono?* "A. N. O." means well, doubtless; but he might as well have addressed his remarks to Queen Victoria as to the "modern go-ahead," who, we dare affirm, reads not the *Journal of Horticulture*—alas! Would that he could follow "A. N. O.," whose pen runs on "from grave to gay, from lively to severe," for, although the modern go-ahead might never be a gardener he would, at least, have received an elementary lesson in gardening, as well as the sound castigation he so richly deserves to enforce it, from "A. N. O."—A. N. OLDHEAD.



Recent Weather in London.—At last we have had one touch of real winter. This was on Sunday morning, when we awoke to find everything enveloped in a mantle of snow. It did not remain long, however, but was succeeded in the afternoon and evening by a cold driving rain. Monday was dry until evening, when there was a slight drizzle, but the wind continued very cold, and the same conditions prevailed on Tuesday. A slight drizzle fell on Wednesday morning.

Weather in the North.—For a week we have had rain almost every day or night, with frequent high winds from the west. The 23rd was fine for good part of the day, and there were a few glimpses of sunshine on the 25th. On Saturday morning heavy showers of sleet and snow were followed by a fairly good day. Sunday morning brought fully an inch of snow, and 8° of frost were registered during the night. All the surrounding hills have been thickly covered with snow during the week, and on Monday the low grounds still were white and the day good.—B. D., *S. Perthshire*.

Coleus thyrsoides.—In several of the houses at Kew groups of this charming plant are to be seen, and in each place it appears to attract more attention than any of its neighbours. Seeds of it were received from British Central Africa a few years ago, and this is the third time it has flowered at Kew. Judging from its behaviour up to the present time, it is likely to prove one of the best winter-flowering additions of recent years to the warm greenhouse. The leaves are very similar in size and shape to those of the ordinary garden *Coleus*, but are not variegated. The flowers are borne in terminal inflorescences, often 6 inches long, a very large number of flowers going to form each head. They are bright blue in colour, and make a most effective display, especially if shown against a dark background of foliage. The cultivation is as simple as that of the ordinary garden forms. Cuttings inserted in spring and stopped frequently make large plants in 7 or 8-inch pots by autumn. A cool house or frame is all that is necessary during summer, or the plants may even be plunged outside. After they are housed for winter a minimum temperature of 45° should be given, raising it 5° when the flower spikes begin to show. It may be had in flower from Christmas onwards for a month or six weeks.—W. D.

Warranty of Seeds.—There seemed to me in the decision given by Mr. Justice Channell in the case reported on page 49 last week to be more that was legal than was moral. Until I read the report of the case I could not conceive that any honourable firm would shelter themselves behind such a defence as was made, that the vendors gave no warranty and would be responsible for none. Surely it is but fair to the purchaser that he should have an express guarantee that the seeds ordered by him are sent in strict accordance with his order, and it would be only just on the part of the vendor to give such warranty, and be responsible for it. In the face of such a decision a grower may order Melon seed and get Cucumber, or Tomato and get *Solanum capsicastrum*, or Cauliflower and get Turnip, or Ailsa Craig Onion and get James' Keeping. Indeed, the changes might be rung on all sorts of things with the same result, according to Mr. Justice Channell's decision, that so long as the vendor declares he gives no warranty then he is safe from claims for damages. One naturally wonders whether this form of morality, or lack of it, characterises the whole seed trade. The case was in one of its phases rendered absurd by the defendant setting up a counter claim for £60 as the product of the loss of 3s. worth of seed. That was of course ridiculous. But there may have been material injury done through the stupid blunder of the plaintiffs to the defendant, if he was, as seemed to be the case, in the habit of raising thousands of Celery plants of, as the name of the variety shows, one of the finest and most widely grown of Celeries in the north, and he may have been expected to compensate his numerous customers for the losses they had sustained in not having their favourite Celery to compete with at their local shows, also in loss of reputation because of the trouble thus created with his clients.—A. D. [Cannot the purchaser be said to have expressly waived his right to implied warranty by ordering from the seedsman's form?—ED.]

Gardening Appointment.—Mr. James Mitchell, head gardener at Glenstal Castle, Murroe, co. Limerick, and many years general foreman at Castleborough, Enniscorthy, has been appointed head gardener to C. M. Doyne, Esq., Wells, Gorey, co. Wexford, in succession to Mr. Dennett.

Massachusetts Horticultural Society.—We have just received a copy of the complete schedule of the exhibitions to be held under the auspices of this Society during the year. There are about twenty-four shows distributed throughout the twelve months, so that it is practically impossible for any crop to miss having a place at the period when it is in the best condition. Amongst the total of 800 classes the sum of \$150 dollars is distributed. Such a strong society should be a power for good over the radius that its members extend. The Secretary is Mr. Robert Manning.

Honouring the Famous.—Every year the practice of naming new varieties of flowers after persons who happen to be men of the hour is becoming more common. The latest additions are *Cypripedium* Sir Redvers Buller, and Generals Roberts and French in the way of Primulas, and as famous soldiers seem to be the order standing first at present, raisers of fresh varieties should have no difficulty about naming their prizes if they take South Africa as a field from which to get the titles. Lord Kitchener was, I think, honoured in this way at the end of the Soudan campaign, but there is plenty of material at hand just now, when we think of Methuen, Gatacre, White, Baden-Powell, and a host of other heroes. Raisers are surely not at a loss now for names for fresh introductions, and perhaps the latest in Chrysanthemums will be "The Absent-Minded Beggar."—V. T.

Cardiff Societies.—The annual general meeting of the Cardiff and County Horticultural Society was held at the Town Hall on Thursday last, when a large number of the Committee and subscribers attended. The report and balance sheet for the past year were passed, and the accounts are considered very satisfactory. The following officers were appointed:—President, the Worshipful the Mayor (Councillor S. A. Brain); Chairman of Committee, Mr. S. Medhurst; Vice-Chairman, Mr. John Grimes; and Secretary, Mr. H. Gillett. The dates of the annual show were fixed for July 18th and 19th, and the schedule was arranged and will be issued forthwith. The Cardiff and District Chrysanthemum Society has fixed November 7th and 8th for the next annual show, and at the general meeting on Friday last the following officers were appointed:—Mr. John Howe, Chairman of Committee; Mr. George Shewring, Vice-Chairman; and Mr. H. Gillett, Secretary. Regret was expressed that the late Chairman, Mr. F. G. Treseder, had to resign through pressure of business, and a hearty vote of thanks was passed by the Society for the able manner in which he had filled the office of Chairman for the past three years.

Birmingham Gardeners' Association.—The annual business meeting was held on the 22nd inst., Mr. W. B. Latham presiding in the unavoidable absence of the President of the Society, Professor W. Hillhouse, Mason's College. The report shows that favourable work was done, and that excellent lectures and papers were given by experts; also an increase in the membership by horticulturists, and likewise a very pronounced increase of readers of the numerous and valuable books of the library. Office-bearers were re-elected, and resulted as follows:—President, Professor Hillhouse; Vice-President, Mr. J. W. Oliver, science teacher, Technical School, Birmingham; Chairman, Mr. W. B. Latham; Vice-Chairman, Mr. Walter Jones; Librarian, Mr. W. Gardiner; Treasurer, Mr. W. Spinks; Secretary, Mr. W. L. Deedman; Auditors, Messrs. Redfern and W. Dodd; Committee, Messrs. John Pope, C. H. Herbert, C. R. Bick, W. B. Childs, W. Hiron, T. Mumford, Alfred Cryer, G. Pressly, G. Stacey, H. A. Burberry, and E. J. Mustin. At the same meeting, in response to the prizes offered by the Committee for three Cyclamens in pots, Mr. A. Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, Edgbaston, was awarded the first prize for very fine examples; the second prize falling to Mr. Dedicott, gardener to Alfred Wiggin, Esq., Northfield; the third to Mr. E. J. Mustin, Moseley; and an extra prize to Mr. J. Maldrem, Northfield, all with worthy exhibits. Mr. Mustin also brought a few cut flowers of late Chrysanthemums; and Mr. G. Stacey an excellent dish of Seakale, well-kept Apples, and a fine dish of Industry Potatoes. The meeting closed with the decision to hold the annual tea reunion of the members and lady friends either on the 14th or 21st of February, subject to arrangement.

Hessle Gardeners' Society.—A fortnightly meeting of the above Society was held in the parish schoolroom on January 23rd, there being a record attendance; Mr. Mason occupied the chair. The essayist for the evening was Mr. Judson from the East Park, Hull. The subject, which was Chrysanthemums, proved to be one of the most popular ones of the session, and was thoroughly practical and instructive in every detail. The essayist made it clearly understood that anyone who wishes to excel in the production of these popular flowers must pay strict attention to every detail of their culture at all seasons. An interesting and instructive discussion followed. Votes of thanks to the essayist and Chairman terminated the meeting.—J. F. D., *Yorks.*

Reading Gardeners' Association.—The members of the above Association assembled in force on the occasion of the annual tea and smoking concert, which took place on Monday evening last in the Abbey Hall, kindly lent by Messrs. Sutton & Sons. The President, Mr. C. B. Stevens, presided at the tea, which commenced at 6.30, the company including Mr. Leonard Sutton and Mr. M. H. F. Sutton. The tables and hall presented a bright and pleasing appearance, having been decorated under the supervision of Mr. Macdonald with foliage and flowering plants sent by Mr. J. Woolford, The Gardens, East Thorpe, and Messrs. Sutton & Sons. During the tea the Chairman gave the toast of "The Queen," referring to the great trials Her Majesty was passing through, and spoke of the kindness and sympathy she was showing to the friends of our gallant soldiers fighting in South Africa. Subsequently he presented to the winners the prizes offered in the essay competition. At eight o'clock the smoking concert commenced, presided over by Mr. Leonard Sutton, and it was without doubt the best and most varied ever held at these annual gatherings.

Liverpool Horticultural Association.—There was a fair attendance of members on the occasion of the annual general meeting, Mr. Thomas Foster presiding. There had been a small loss on the year's working, but the Association have in hand a balance of £92 2s. 1d., which, according to the many demands at present on the public, was considered satisfactory. Even when low in funds members have never forgotten the charitable institutions, and this year grants of 3 and 2 guineas were made respectively to the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund. The election of Committee followed, the new members being Messrs. E. Bridge, J. Rimmer, J. Bracegirdle, John Stoney, T. Carling and E. Finch. The Lord Mayor (Louis S. Cohen, Esq.) was elected President, and it is to be hoped that the Committee will endeavour to secure his presence at the opening of the forthcoming spring show to be held in St. George's Hall. Mr. Harold Sadler was unanimously elected Secretary, many gentlemen present testifying to his geniality and business-like capacity. Mr. W. Fletcher Rogers and Mr. G. Blackmore were respectively appointed Hon. Treasurer and Sub-Treasurer. Spring and autumn shows were agreed to. Mr. Stoney proposed a hearty vote of thanks to Mr. Foster for presiding, and a most pleasant and successful annual meeting was brought to a close.—R. P. R.

Bristol Gardeners' Association.—The fortnightly meeting was held at St. John's Parish Room, Redland, on Thursday, 25th inst. Mr. C. Lock, presided over a large attendance. The meeting was especially interesting by reason of a paper read by a member from the Cardiff Gardeners' Association, Mr. J. Graham. Under the title, "Gleanings from a Horticultural Class," Mr. Graham dealt with a variety of subjects, all of great importance to gardeners, such as soil and its constituents, bacteria, thermometers, dew and rain, laying out pleasure grounds, rockery formation, draining of land, and plant diseases. He dealt with the subjects in a vigorous and able manner, giving much useful information. Mr. Graham strongly urged the formation of botany classes in connection with gardeners' associations, claiming that a knowledge of theory was a great help in practical work, and pleaded for more sympathy between head gardeners and their assistants, being cordially thanked for his attendance and paper. Prizes for a Pitcher Plant were awarded—first, Mr. White, second, Mr. Bannister, and a certificate of merit to Mr. Ross for a *Primula sinensis*. An exhibit of great interest was provided by Mr. Graham, who showed over fifty dried specimens of British plants, which attracted much attention. A motion of sympathy with the relatives of the late Canon Ansley was passed. The late Canon was a Vice-President of the Association during his residence at Redland, and took a keen interest in the work from the time of its formation.

The Imperial Yeomanry.—Messrs. Boulton & Paul, who had given a frame house for a hospital ward, have now added a similar house, with kitchens and offices complete, for the use of Mr. A. Fripp, the hospital surgeon. The ward house will contain thirty-five beds.

"Lawns."—Messrs. Sutton & Sons have sent us a copy in pamphlet form of their useful work on the formation of lawns of various sizes and for different purposes—handy for reference by gardeners; we have also received a thoroughly well-bound copy of the same work, clearly printed on stout paper, and enriched with photographic illustrations—worthy of a place on the drawing-room table. The instructions on preparing the ground for new, and improving old lawns, are concise and to the point—so clear, in fact, that they cannot very well be misunderstood, and as the information is the result of great experience, it possesses the great merit of trustworthiness.

Chemical Manures.—This was the subject of a lecture delivered by Mr. F. W. E. Shrivell at the fortnightly meeting of the Reading Gardeners' Association, on Monday evening last. The Lecturer, in an interesting manner, laid before the members the results of the various experiments carried out at Toubridge during the past five years with chemical manures on vegetables and fruit crops. An interesting discussion followed. On the proposition of the Chairman (Mr. Fry) a hearty vote of thanks was accorded to Mr. Shrivell for his lecture, and to Mr. F. Lever, The Gardens, Hillside, for staging an exceedingly well-flowered plant of *Cœlogyne cristata*. Six new members were elected.

Apple Bramley's Seedling.—The good qualities of this variety are yearly getting better known, and any Apple of its class that keeps hard, firm, and full of juice at this time of year is welcome in the kitchen, while those whose tastes are inclined to a brisk flavour will be sure to like it for eating. Its free growing qualities and fruitfulness are also well known, and many of the fruits take on a fine colour after being stored, an attribute not common to really good varieties. In sending us fruits of it, Mr. Henry Merryweather, who sent it out, remarks on this last point, and really some of the fruits are as finely coloured as a Worcester Pearmain in October, and as solid and heavy as the day they are gathered. They evidently know how to keep fruit at Southwell.—C. HALL.

Notes from Ireland.—The weather in the Irish metropolis is anything but gay; rain is frequent, although we have had a sprinkling of fine days. Cyclamens and Primulas in variety add a charm to an otherwise dull outlook. At a recent meeting of the Royal Horticultural Society of Ireland the large silver medal given by the trustees of the Williams' Memorial bequest was awarded to Mr. Andrew Porter, gardener to Lord Ashtown, Woodlawn, Galway, with a total of fourteen first prizes, exclusive of seconds or any lesser awards. It was closely contested, as Mr. T. Byrne, gardener to George Drimmie, Esq., Bellevue, Booterstown, had a total of thirteen. In a recent issue I alluded to J. H. Dudgeon, Esq.'s, orangery, remarking on the non-edible fruits; I have since been sent a sample which completely reverses my former opinion, as the fruits are fine and juicy.—A. O'NEILL.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.		Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
			At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
			Dry Bulb.	Wet Bulb.	Highest	Lowest.					
			deg.	deg.	deg.	deg.		ins.	deg.	deg.	
Jan. 1900											
Sunday	21	E.S.E.	32.2	32.0	50.5	28.0	0.19	38.2	40.5	43.5	24.1
Monday	22	W.S.W.	42.8	41.7	49.8	31.5	—	40.5	40.8	43.5	29.4
Tuesday	23	W.S.W.	48.8	46.1	51.5	42.6	0.02	41.7	41.4	43.5	40.0
Wed'sday	24	W.S.W.	47.9	46.9	53.5	45.2	0.11	43.1	42.2	43.6	41.0
Thursday	25	W.S.W.	41.9	38.9	50.1	40.5	—	42.3	42.9	43.9	30.4
Friday ..	26	W.S.W.	46.4	44.5	49.2	41.0	0.03	41.7	42.9	44.1	33.3
Saturday	27	W.S.W.	36.3	35.1	41.6	34.7	0.14	41.6	42.9	44.2	27.5
MEANS ..			42.3	40.7	49.5	37.6	Total 0.49	41.3	41.9	43.8	32.2

Mild spring-like weather has prevailed during the past week with small quantities of rain on five days.

IRIS SAARI NAZARENSIS.

THE species *Iris Saari*, which is a near relative of the *Iris iberica*, first came into notice during the year 1876. It differs from its congeners in the respect, that the standards are more incurved and the falls are ascending oblong and not obovate. Otherwise in its origin and its habit it resembles *I. iberica*, and the same treatment suffices for both. The district of the Caucasus between Armenia and Persia is

sun. They will thrive better there than in pots, and if left undisturbed will continue flowering for years. The charming variety *nazarensis* (fig. 22) will make a useful and welcome addition to the number of beautiful forms of this family already at our disposal. It is a dwarf grower, the stem rising about 9 inches above the ground level, and the flowers are very attractive. The standards are transparent white, the falls white dotted thickly with brown, and with a large purplish patch in the centre.—M.



FIG. 22.—IRIS SAARI NAZARENSIS.

where this species of *Iris* has its home, at a height of more than 6000 feet above the sea. The members of the whole group bear a very striking aspect, but it may be noted that there is more of refinement and less of grandiose peculiarity about *Iris Saari* than in *iberica* and its varieties.

Coming as it does from an alpine region, this *Iris* is eminently fitted to endure the rigours of the English climate. There is a peculiar notion prevailing that it is necessary to lift, dry, and store these plants for the winter. The result of this is that many of them perish in the process. The simplest and the best way is to set them out in a bed of rich fibrous loam, fairly moist, and in a position exposed to the midday

FLOWER BED IN PEARSON'S PARK, HULL.

PERHAPS I may be pardoned for asking to be afforded space in the *Journal of Horticulture* for the publication of the enclosed photograph (fig. 23) of a very large and elegant-looking flower bed of original design that was to be seen during the past summer in Pearson's Park, Hull.

We are in no way astonished that under the guidance of Mr. Peak, the park's Superintendent, the public of this city is occasionally afforded an agreeable surprise, for in the west as well as the east parks attention has on previous occasions been called to Mr. Peak's

great ability in turning unsightly corners into features of much horticultural interest and originality. In the present instance, he has succeeded in producing on a single bed what may justly be assumed to be a complete flower garden.

That the design, as well as the style of planting, is original is unquestionably correct, and there need be no surprise if, on a future occasion, further efforts in this direction are brought to light. The position the bed occupies is an ideal one, sheltered and set off as it is by a fine background of shrubs, which are margined with a collection of perennial plants, it being scarcely possible to conceive that within 25 or 30 yards of the bed and beyond the shrubs runs the public thoroughfare.

The bed in question is 25 feet in length by 19 feet in width. The outer edging, as may be noticed on reference to the photograph, is planted at a little distance apart with *Echeveria secunda glauca*, followed by a line of dwarf Golden Box and a second line of *Retinospora plumosa aurea*, and to the inner portion of the bed a third line of *Ajuga reptans*. The four corners of the bed are set off with one

EARLY PEAS.

THE time has arrived when a great number of gardeners make an effort by sowing under glass to hasten the production of the earliest gathering of Peas. Various means are devised, and while pots afford greater facilities for planting, shallow boxes must not be ignored. I say shallow, by which is meant a depth of not more than 2½ inches. Sown thinly in these, the bottoms of which are covered with coarse leaf mould or Mushroom bed refuse before they are filled with the soil mixture. This layer the roots take hold of, and if not sown too soon or forced in heat they transplant readily, and it is surprising how quickly they recover from the disturbance caused by planting.

In deep boxes filled with soil the work is neither so expeditious nor so satisfactory. In shallow boxes the soil becomes almost matted with active roots, which at the time of planting can be divided into small bunches. The slight check, too, that is thus given is regarded by some growers as a means by which podding is accelerated. This, however, depends very much on the weather from that time. Though pots may claim some advantages over boxes, the latter expedite the

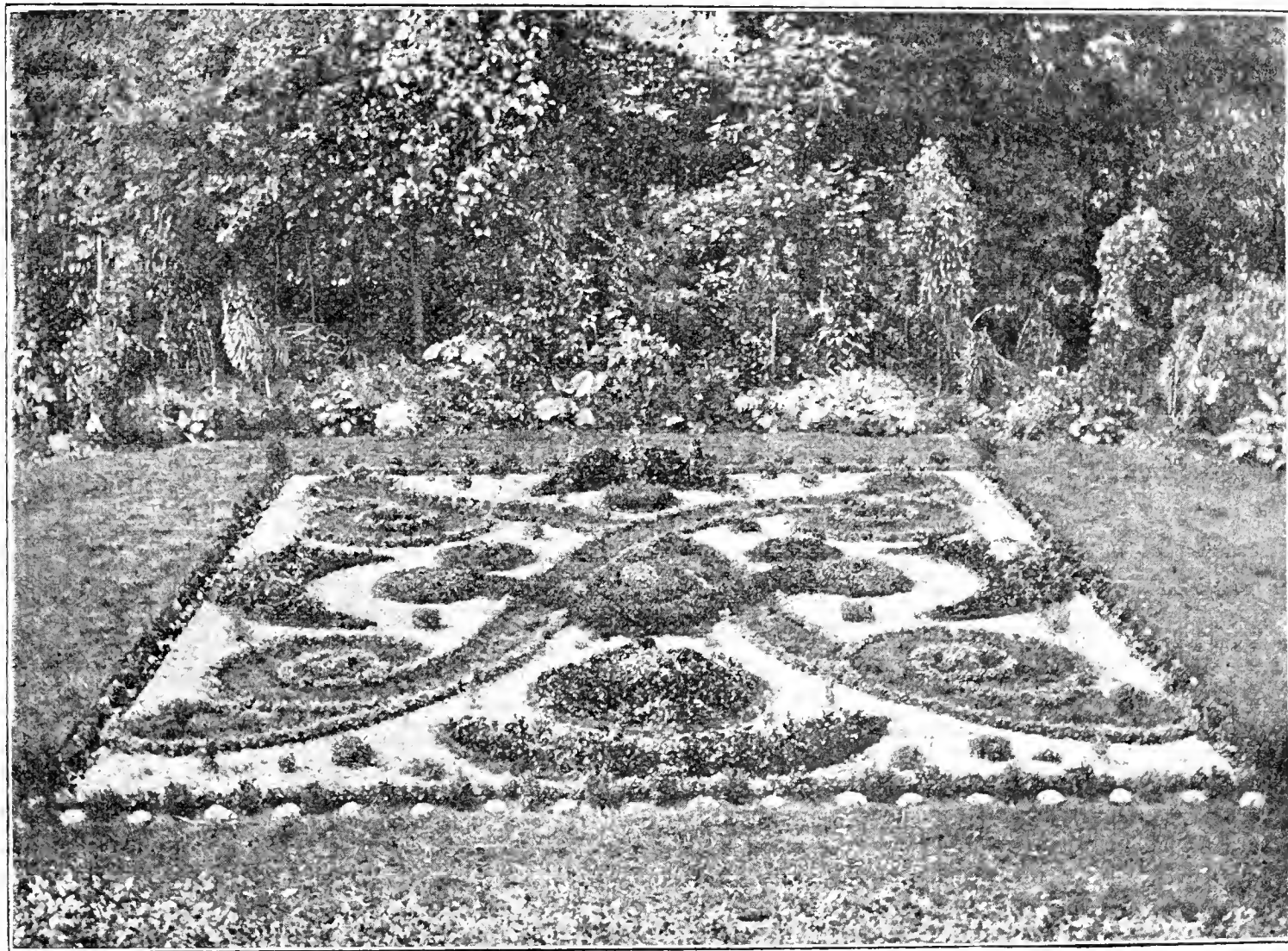


FIG. 23.—A BED IN PEARSON'S PARK, HULL

plant in each of *Diplopappus chrysophylla* as distinguishing features. The groundwork, which appears to afford a cheery aspect to the whole bed, is composed entirely of *Antennaria hyperborea*. The scrolls are first lined out with *Pyrethrum selaginoides aurea*, and afterwards filled in with *Armeria maritima*. The rest of the design is planted with the following:—*Alternanthera versicolor grandis*, *Alternanthera aurea*, *Alternanthera magnifica*, *Lobelia* (a fine blue seedling), *Lobelia Swanley Gem*, and *Lobelia King of the Blues*, *Begonia Sutton's Miniature*, and *Begonia Sutton's Fairy Queen*.

It will be observed that throughout the bed there are small dark patches, some of which are square and others circular in shape. These are filled with plants of a suitable character to afford tone to the whole arrangement, and include Golden Thyme, Golden-leaved *Ligustrum ovalifolium*, *Cuphea platycentra*, *Fuchsias coccinea variegata* and *Sunray*, *Euonymus pulchella* and *E. radicans variegata*, with *Vincas major variegata* and *major maculata*. By way of affording relief to the other plants used, a very good effect was produced by placing in suitable positions all over the bed very small shrubs of an ornamental character, as single-dot plants, of *Cupressus lutea*, *Lonicera aurea reticulata*, *Thuia occidentalis lutea*, *Berberis dulcis nana*, *B. compacta*, *Retinospora plumosa argentea*, *R. filifera*, and *R. squarrosa Veitchi*.—J. P. LEADBETTER, *Tranby Croft Gardens, Hull*.

work in sowing, and require slightly less room, items that in the well-appointed garden account for little, but in that in which there is a dearth of labour press into prominence almost every day, and in the spring months in particular.

Except in sheltered gardens, and in warm soils, November-sown Peas do not give a return that will satisfy in the extent of their produce, and often after a spell of frosty weather they are so badly crippled that there remains no other course but to dig them in and plant again elsewhere. It is only in favourable winters that outdoor sowings made in November can be said to be profitable, and since the introduction of the early marrowfat types, the round varieties, which alone are suited for this phase of culture, are fast becoming ousted.

Sown in boxes or pots, and grown steadily in cold pits, they are sturdy, hard, and in otherwise good condition for putting out in March. Even then the state of the weather must be taken into account, and provision made for protecting them against frost visits, for bright summer-like days are treacherous in the extreme. It is always advisable to stake the taller-growing sorts at once, and give additional protection with light boughs of Yew or Fir, inserted on the windward side of the rows. The soil should be in a good planting condition, and the day chosen a mild one, otherwise there is loss rather than gain in the ultimate results.—W. S.



MADAME CARNOT.

THIS variety, which is so well known and highly esteemed by all Chrysanthemum growers, as already recorded in this Journal, has produced an interesting sport that is described as being of a bright crimson which will be likely to become as popular as its parent, provided all goes well with it.

The feeling that the announcement of its advent probably at first occasioned to the majority of the legion of specialists was one of surprise, and in the absence of any authentic, or very definite, information respecting its origin, the question of it being the offspring of one of the sports of Madame Carnot naturally arose. This, if being the case, meant the production of a secondary sport of a crimson colour from a yellow variety derived from a white flowered parent.

In any case the sport is a most interesting one, from the fact of the parent, itself in the fore rank of standard white varieties, having produced sports of such varying colours. It seems that with highly cultivated plants, as with men, it is generally the unexpected that happens.

The silent methods of Nature with regard to both the distribution and limitation of colours in flowers, and the surprising changes effected in some of them, are very mysterious, and the various stages of their progression are difficult to trace. Indeed, when the most precise records are obtained through careful observations, it is by no means certain that a general principle can be established that would avail very much in elucidating the subject in relation to the order of their evolution. But this is a digression.

To revert to the sport in question, which, it is said, is another and very distinct one produced by Madame Carnot from a plant in the possession of Mr. F. Perkins of Oxford, and if, as we have been informed, it was the only one of this variety that he reserved for stock purposes, the circumstance of its appearance and security must be considered as singularly fortunate.—JOHN E. JEFFERIES.

CHRYSANTHEMUM DAMP.

My first experience with this annoying disease was in this wise. On a certain Tuesday in 1898 I was worshipping what to my poor efforts appeared to me a glorious bloom of Mutual Friend; its lovely whiteness charmed me. The following day I returned to my Friend, prepared to bestow a similar amount of admiration. To my horror, many of the petals had very small pink spots scattered over them, and referring to Mr. Molyneux's book, I made up my mind that this must be the so-called damp. By the following day these had greatly increased in size, and the beauty of the bloom was utterly marred. I cut it, and took it to my cook, who is a worshipper of flowers from their cradle to the grave; no stage of decay seems to come amiss to her. Death, floral death, still appears to have charms for her! After lamentations over the bloom it was placed in water; the disease went on rapidly, and by Saturday night it was a mass of brown rotten petals. Later, blooms of Mrs. G. Gover and others went in the same way, and my small array was sadly disfigured.

So much for that year. Last October, on housing the plants, I started the fire, giving generally some small ventilation at night, increasing it during the day. I saw nothing of my enemy till a few days after the opening of November, when there was a good show of bloom, and I had picked out a respectable six for a stand I had entered at a neighbouring exhibition. The weather was so very mild that I dropped my fire altogether for two or three days, and about the third day Mutual Friend, Madame Carnot, Mrs. Mease, and G. J. Warren, and some other whites, were all hopelessly spotted—blooms I had hoped to show. I immediately put on the fire again, and dusted the blooms well with anti-blight powder from my bellows. This certainly appeared to me to check the mischief, so that many of the flowers retained their spotted condition, which at a distance was scarcely noticeable. I may say that my plants were more crowded than I like, and supposing the condition to be contagious it is, of course, an evil.

There is another point that struck me, which is, that the terminal blooms were affected far more frequently than the crowns. Markedly, was this the case with two of the reddish bronze colour—Mrs. G. Gover and Jos. Chamberlain. On the same plant, the former had one crown and three terminals, the latter one crown and two terminals. In both the crowns escaped, whilst the terminals succumbed. With the exception of these two the disease appeared to fasten on the whites and the pale yellows—Mutual Friend, Rose Wynne, Mrs. H. Weeks, with Madame Carnot and its sports. I have only half-dozen incurved,

and of these Duchess of Fife alone was touched. It is hard to say whether shutting off the fire had anything to do with the incoming of the trouble, but I feel convinced that the anti-blight did arrest the trouble, and seeing that prevention is better than cure, hope another season to try and forestall the enemy by dusting early.—Y. B. A. Z.

CRIMSON CARNOT.

IN reply to "Sceptic," page 78, I should like to state a few facts about this plant, which originated nearly 100 miles from Earlswood. The owner wrote asking me what a crimson sport from Madame Carnot was worth, and I could not resist the journey to see the flower, although I felt sure it would be a wild goose chase, as I have had several such. I was soon on the spot, and sure enough there was Madame Carnot in foliage and growth, with a John-Shrimpton-like flower on the top. The plant was a poor starveling in a 5-inch pot, which may account for the shortness of the florets, but there was no mistaking the parent variety in other respects. For the general satisfaction I am leaving the top eyes on the old stem, in hope that they will show flower buds, and if so I shall send specimens to the Editor. I only hope they will come the same colour as before.—W. WELLS.

How quickly "Sceptic" has forgotten of the existence of a Yellow Carnot. Was not G. J. Warren sent out under the name of Yellow Carnot, the name being persisted in until it was found necessary to drop it? Does not "Sceptic" assume a tone applicable to the sour Grape fable about this Crimson Carnot prodigy? What has the introducer of Red L. Canning to say to the assertion made on page 78 by "Sceptic?"—OBSERVER.

DECORATIVE CHRYSANTHEMUMS.

ONCE again Mr. Molyneux furnishes information which, to the gardener who has an extensive supply of cutting material to furnish over a long period, is most valuable, and particularly to a section of the Journal readers who have not the means of proving newer varieties for this particular purpose. There is a limit to the number of Chrysanthemums that can be accommodated by many of the smaller growers, divided between decorative sorts and those to carry specimen blooms, and to these the advice given by Mr. Molyneux is most acceptable.

There is with every class of grower a desire to obtain the most up-to-date his means will allow, and to embark on a speculative selection from catalogues often leads to results that are not desirable. Chrysanthemums play such an important part in the embellishment of dwelling rooms in winter, both in a cut state and in pots, that the matter of selection is an all-important one, and it is distinctly enhanced when there is an additional claim from the conservatory, which, with the dwelling rooms, must be kept gay the winter through. Monotony is favoured when the same old sorts are grown year after year without the introduction of some fresh stock.

I quite agree with Mr. Molyneux, that R. Hooper Pearson is the finest yellow-flowered variety for decorative work, and although a November flowerer, no doubt by pinching and cool treatment it might be had well into December. It would seem that for the purpose of specimen blooms it has not sufficient size to satisfy growers, but its loss in that section, if this is so, must be a gain in the other. As a conservatory plant it apparently possesses every quality. For January flowering the Queen is said to be the best among whites. In a search through some catalogues I failed to find this quoted, and therefore I take it to be quite new, and a speciality from a nursery from whom I have no list by me.

For January flowering sorts there is always an inquiry, and Chrysanthemum specialists having a stock would do well to bring them before the notice of readers by advertising them by name, so that prospective growers would know the source from which they can be obtained. There are not many varieties, either new or old, that can be claimed to be January flowering under natural conditions. While propagation is still in progress this hint may be advantageously acted upon, both for the benefit of the grower and producer.—W. S., Wilts.

DAVALLIA RUFESCENS TRIPINNATIFIDA.—Lovers of Ferns need not be deterred from growing this splendid stove variety on account of its somewhat long name, for it almost surpasses all the Davallias when a well grown plant is met with. Stately and erect it stands, needing no support, its long plumed fronds of a somewhat pale green colour giving tone to any exhibition collection; in fact, for this purpose it is specially to be commended, being a capital traveller and adding weight with the judges by reason of its quality. Good fibrous peat, round red sandstone, a few lumps of charcoal, and a surfacing of fresh sphagnum moss provide the compost requirements, not overdosing with water until the rhizomes wend their way. In the winter time less water is most certainly required; but on no account place in a colder atmosphere, or a mishap will soon occur.—R. P. R.

RANUNCULUS PARNASSIFOLIUS.

MR. RABY's supposition that this is a plant of modern introduction is quite erroneous, as it has been in this country nearly a century and a half. It is a charming alpine plant, very dwarf in habit, with deep green radical leaves and comparatively large white flowers (fig. 24), borne on bold peduncles. It is a native of the Swiss Alps and the Pyrenean mountains, and though always scarce in England, has been long known. Messrs. Kennedy & Lee introduced it as early as 1769, but there is no record that they succeeded in flowering it. Mr. William Curtis was more fortunate in 1797, as recorded in the "Botanical Magazine" of October, 1797. He received roots of this and several other rare and curious plants from M. Neckar de Saussure in 1796, and obtained blooms the following June from which his



FIG. 24.—*RANUNCULUS PARNASSIFOLIUS*.

characteristic figure was taken. He grew it in a small pot of loam and bog earth. Mr. Donn of Cambridge grew the plant in 1818. Messrs. Loddiges found it prosper and multiply abundantly in sandy loam without any winter protection, giving it abundance of water in the summer, rearing the young plants both from the ripened achenes and by division of the roots.

HARDY BORDER FLOWERS.

IRIS SUSIANA.

THE fine illustration of the magnificent flowers that *Iris Susiana* will yield under favourable conditions (such as those which produced the specimen figured in the Journal of January 5th) must have increased the desire of many readers to grow a flower of such wondrous beauty. None of us who have seen it are likely to forget the impression made by its flowers with their strange yet beautiful colouring. It is worth some trouble to obtain such flowers, and whatever method of cultivation we adopt, it is to be hoped that it may be successful. Research among our older writers shows us that they, like us, were not in agreement about its cultivation. We have had different plans, both old and new, laid before us. It may be that what leads to satisfaction in one garden may only spell failure in another. I have been interested to find that Phillip Miller, whose directions some of us find are not so

far wrong as to make us scorn his methods, advocates planting *Iris Susiana* in a moist place. Although Mr. Upex has had to do this for want of a better position, and although one thought he would be unsuccessful there, it is possible that in unconsciously following the teaching of Miller he may be adopting the plan most likely to give flowers in that particular garden. He has evidently, however, made careful preparations to secure that as little moisture as possible should ascend. Whatever our own views, it is only right that readers should have an opportunity of knowing that there are different practices for different gardens.

PAPAVER RUPIFRAGUM.

We have not among the perennial Poppies the variety of form and colour shown by the annuals, many of which, such as those raised by the Rev. W. Wilks, and known to nearly all as the Shirley Poppies, are so beautiful. The perennials are in course of improvement, and it is possible that they may eventually give us a wide range of colour. At present this is not the case, and we are practically confined to various shades of red and orange, with some white or bluish varieties raised from *P. orientale*. Among the Papavers with orange flowers is *P. rupifragum*, whose flowers resemble in colour those of *Papaver pilosum*. There, however, the likeness ceases, as *P. rupifragum* has much smaller flowers, which are produced on long slender stems. The plant itself is not so tall, and the leaves are more cut than those of the Pilose Poppy. Unfortunately the flowers of this species are likewise fugacious, though not so fleeting as those of *P. pilosum*. It cannot be termed either a showy flower or a good border plant; yet it has its uses in the border, and it is a plant some admire a good deal. It is, as yet, not very common in gardens, but as it is readily raised from seeds, it will likely find its way into more before long. It is a native of Spain and Morocco. A variety called *P. rupifragum* var. *atlanticum* is also in cultivation. *Papaver rupifragum* is one of the parents of some hybrids raised within recent years.

AQUILEGIAS.

We could ill spare the Columbines from our flower borders, but for a time they were little seen. They were, one supposes, too "old-fashioned," and were not brilliant enough to associate with the bedding plants which were so popular at the time. Opinion has changed, and the Aquilegias are in favour once more, although the favourite long-spurred varieties are those now most seen. They are charming plants, and show one how adaptable are many of the hardy flowers to change and improvement. With such beautiful flowers at command—flowers which are easily grown—it is not surprising that some of the charming species of the Aquilegias are little sought after. After all, one of the requirements in the border is a plant which gives little trouble. This virtue these hybrids possess, and they are thus to be recommended for those who like graceful and prettily coloured flowers. The colours are very varied, and they cannot be described as they are so numerous. It is these hybrids, which have the vigour of the old *A. vulgaris* and the grace of *A. chrysantha* and other long-spurred species, which one would advise for use in the border. They are easily raised from seeds, and a good strain will give many charming flowers.

Charming as are these hybrid Columbines, the old *Aquilegia vulgaris* is not to be despised, and one finds many visitors to the garden look upon its blooms with delight. They, too, are wonderfully varied in colour. The double forms, once sought after, look lumpy to me, but some view them with more favour. They are only too prolific in their increase from seed, and become very troublesome when they spring up in unwelcome places. Though the foregoing are among the best for the border, there are some of the species so pretty that they would be very ornamental. In its way *A. chrysantha* is very pleasing, with its pretty yellow flowers on stalks 3 or 4 feet high; so is *A. formosa*, with its red and yellow flowers. The scarlet and yellow *A. canadensis* is also worth growing in the border; it is dwarfer than the two last named. Most of the others—such as the exquisite *glandulosa*, *cœrulea*, *pyrenaica*, and *alpina*—are better suited for the rock garden than the border. In the hybrids first named will be found almost all their charms, with that more robust constitution which makes them fit for the greater trials of the mixed border.

While these Aquilegias grow in almost any good soil, they seem to like one of a rather sandy nature. The seeds may be sown in the open, but I prefer to sow the choicer hybrids under glass. The seeds germinate irregularly, and some will remain for a considerable time before showing signs of growth. It is thus well to be careful, in pricking off seedlings, not to disturb the soil in which the seeds were sown any more than can be avoided.—S. ARNOTT.

SWEET PEA GORGEOUS.—English-raised varieties of Sweet Peas are almost matchless in their beauty and habit, and quite sufficient to satisfy the majority of growers. But then there are the numerous connoisseurs who like to test the named varieties, and as the signal has been sounded for a conference, the need of perfect varieties will be readily recognised. Such a one is found in Burpee's novelty *Gorgeous*, a variety with a name which does not belie it, as it is of a shade much richer than anything of the kind seen previously. Not only is it robust, but the flowers are freely produced and the substance correct. A warm rich orange salmon will almost describe it, the flowers being thrown well from the foliage.—PRACTICE.

ROYAL HORTICULTURAL SOCIETY.

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FULL particulars of the exhibitions of the Society can be had from the "Arrangements for 1900," in which are also given lists of the various Committees, and these we reprint for the benefit of our readers.

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MacMichael, Rev. C., Walpole Rectory, Norfolk.

Marsh, Rev. T. H., Cawston Rectory, Norfolk.

Milne Readhead, R., Holden Clough, Bolton-by-Bowland, Clitheroe.

Moore, F.W., V.M.H., Royal Botanic Gardens, Glasnevin, Dublin.

Pearson, Duncan, Lowdham, Notts.

Pope, J., The Ericas, King's Norton.

Poupart, W., Marsh Farm, Twickenham.

Reuthe, G., Hale Farm Nurseries, Tottenham.

Smith, J. A. Dorien, Tresco Abbey, Scilly.

Sydenham, R., 190, Bristol Road, Birmingham.

Titheradge, G. T., 10, Cavendish Road, St. John's Wood, N.W.

Walker, James, Ham Common, Surrey.

Ware, Walter T., Inglescombe Nurseries, near Bath.

Wilks, Rev. W., M.A., Shirley Vicarage, Croydon.

Willmott, Miss, V.M.H., Warley Place, Great Warley, Essex.

NOTE.—Members of the Council are members of all the Committees.

GREYIA SUTHERLANDI.

THOUGH this plant has been considered chiefly interesting to botanists it is by no means devoid of horticultural merit, for the bright red flowers are produced in dense terminal clusters (fig. 25), and have a rich appearance. In this country specimens, which are not very numerous, seldom exceed a few feet in height, but in its native habitats, the rocks at Port Natal, it is said to attain the dimensions of a small tree, which when in flower has a very brilliant appearance. The leaves are somewhat fleshy and crenated at the margin. Some are quite smooth, and others densely pubescent, a peculiarity that has been repeatedly noted by several observers. It blooms early in the year. This information will, we trust, suffice for W. Parsons, and in addition be of assistance to other readers.

BEDDING LOBELIA FROM SEED.

THE time is not so far distant when it was impossible to grow Lobelia from seeds to produce plants which would be of compact habit and also produce flowers freely. It was necessary to place reliance only on cuttings which were obtained in early spring from stock plants wintered in the greenhouse. Sometimes these would fail, or an insufficient number would be prepared. This can now be avoided, for if some of the excellent strains are procured, and seeds are sown not later than early in February, an excellent stock of young compact plants may be grown by bedding out time.

Lobelia seed is very small, and requires to be dealt with carefully, and to be sown in heat. Fine light soil, composed chiefly of loam, leaf soil, and sand, ought to be employed. Use a wide, shallow pan, drain freely with potsherds, covering them with a layer of rough material and the compost filled in level to the rim, gently shaking down and pressing level. Although the compost should be moist, it is desirable to water the whole gently before sowing. After draining scatter the seeds on the surface, making no attempt, as is usual in most cases of sowing seed, to sow very thinly. Cover the seed with very fine sand, a mere dusting sufficing. Special attention must be given to maintain the surface uniformly moist, so as to avoid the necessity of watering the soil previous to the germination. This can best be effected by placing a square of glass over the pan and shading with paper. A bottom heat of 60° to 65° will cause the seed to germinate. If the pan can stand on a moist base it will be of great advantage in preventing rapid drying of the soil.

Immediately the seedlings push through the soil remove the shading and gradually dispense with the glass, placing the pan in

plenty of light, but shading from strong sunshine. It will spoil the seedlings to a considerable extent if they are allowed to become drawn by examining them too late at the point of germination. The supply of water to the soil is a matter requiring care with Lobelias when tender seedlings. It is a good plan to sink the pot in tepid water to the rim, and withdraw it as soon as water commences to show on the surface. With good drainage and proper soil this does not saturate the soil unduly, but effectively moistens it without disturbing the small plants.

Growth will progress rapidly in the light and warmth of a heated structure, and it will be evident that the seedlings are becoming more and more crowded, but they are short, green, and healthy. The time has arrived for transplanting them. The best manner of carrying this out is to prepare shallow boxes or pans, properly drained and

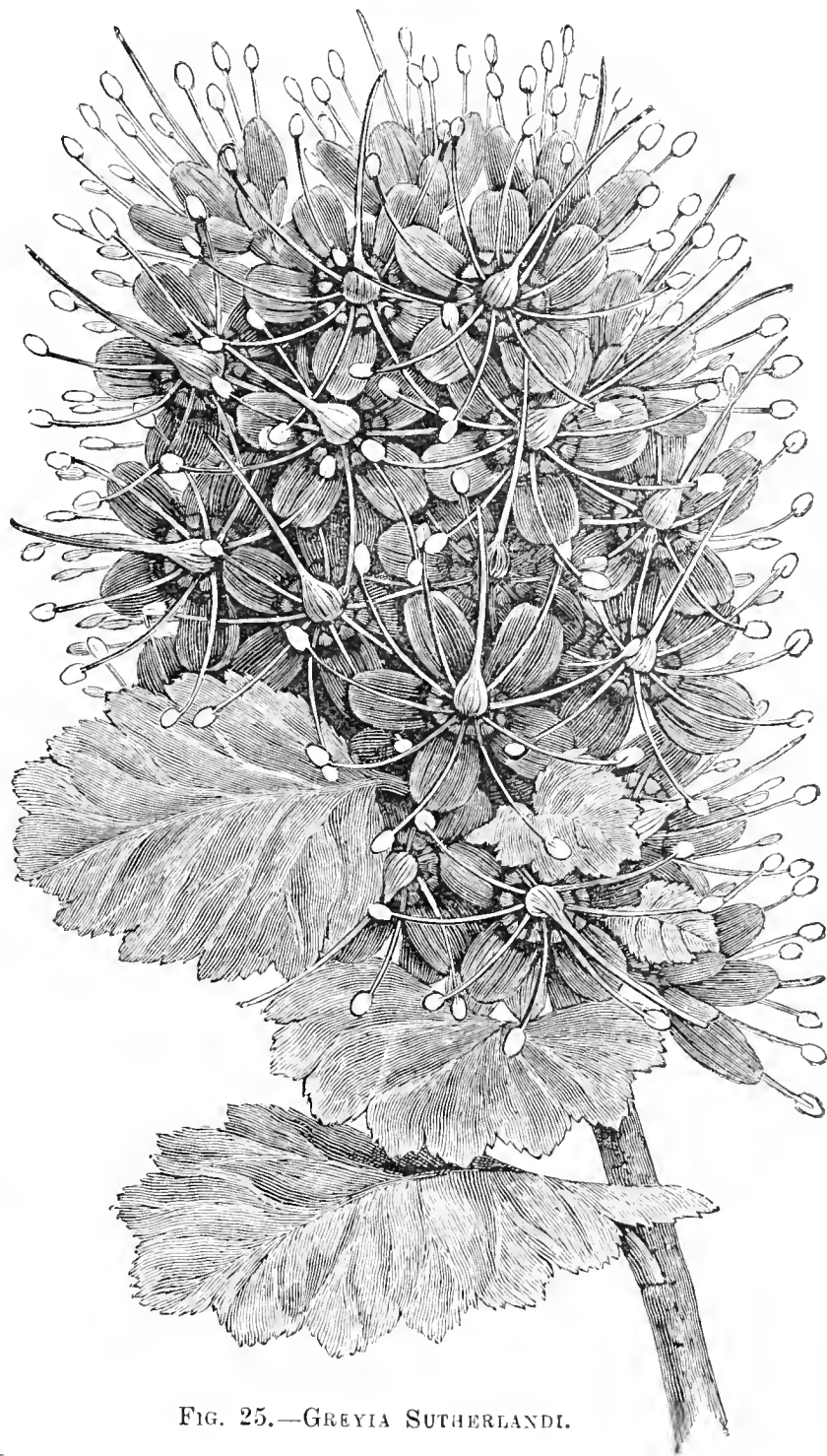


FIG. 25.—GREYIA SUTHERLANDI.

filled with a light sandy mixture pressed moderately firm. Lift the seedlings in small patches, and plant them a couple of inches apart, burying them to the seed leaves. Place the boxes in a warm, moist position, and syringe daily until growth commences freely, when water may be given in the usual manner. Retain the plants in a heated structure until thoroughly established. Afterwards give cooler treatment, and when the patches of seedling plants begin to touch each other more room must be given. The best place this time is a shallow bed on a hard bottom in a cold frame, but they may be accommodated in boxes. Prior to the final planting at the end of May, full exposure to air is necessary, but protection must be given against sudden May frosts. One aid in rendering the plants compact and bushy is to frequently top the growths when extending vigorously.

The dwarf compact varieties of Lobelia are the best for massing and edging. The spreading varieties can also be raised from seeds, but they are more adapted for growing as isolated specimens in beds and borders, as well as for pots and hanging baskets.—E. D. S.

THE TULIP TREE.

CONSIDERING the highly ornamental character and hardy nature of *Liriodendron tulipifera*, it is somewhat remarkable that there are comparatively few specimens to be found in the British Isles. Possibly the scarcity arose from a mistaken notion by would-be planters that the tree would not flourish in this climate; also that nurserymen found it more difficult to propagate than, for instance, the Oriental and Occidental Planes, and which are so extensively used as town trees. It is for this latter purpose that my present remarks are chiefly intended, and it would be interesting to learn if there is any specific objection to the Tulip Tree for the purpose indicated. My own limited experience of its adaptability favours its adoption, and I am cognisant of a few specimens flourishing well within the smoky atmosphere of Birmingham, and the foliage of no other tree keeps clearer of sooty or other substance. Moreover, the highly glabrous surfaces of the leaves, changing from a bright green to an intensely bright golden yellow in the autumn, afford a diversity of colouration not possessed by the otherwise desirable and elegant "town" Planes. It would, however, be somewhat presumptuous to expect the street or boulevard-planted Tulip Tree—unless in exceptional situations—to produce its beautiful flowers, and even then not until it had attained an age of from twenty to thirty years.

The tree is perfectly hardy, as proved by numerous fine specimens in different parts of the country fully exposed to the roughest winds and sharpest frosts incidental to the British Isles. The flowers are sweetly scented, and the petals six in number, and the three sepals forming the calyx are prettily coloured with orange, yellow, and red. The leaves are truncate at the point, four-lobed, and similar to a saddle in shape. Hence the tree is also known as the Saddle Tree. The Tulip Tree is a native of chiefly the Western States of North America, where in the deep alluvial soils on the banks of rivers it attains to magnificent dimensions, reaching a height of from 120 feet to 140 feet, with boles girthing up to 20 feet in circumference at 5 feet and 6 feet from the ground. It was introduced into Europe upwards of 200 years ago, and there are specimens of it in England 100 feet high, notably at Longleat, in Wilts. Some thirty years ago the writer had the pleasure of viewing the trees in October, when they were enriched with a mantle of golden hued foliage. The Longleat strong loamy soil evidently suited the Tulip Tree, though it will also flourish in light soils.—W. GARDINER.

STUMP-ROOTED CARROTS.

Most Carrot growers have some favourites among the large list which every seed catalogue furnishes, and there can be no doubt that many persons are attracted by the models therein illustrated, while others are fascinated by the splendid examples that are exhibited at summer shows by the leading vegetable growers, and order those which are thus represented. Some may obtain roots almost a counterpart of those seen the previous season, while others are disappointed because the crop does not realise their ideal. There are some soils that will, with ordinary cultivation, produce beautifully shaped Carrots, and there are gardens in which it is almost impossible to grow shapely roots at all. Such cases demand special preparation of the soil, or provision made for exhibition purposes, especially for the long and intermediate types.

For household purposes—and Carrots, it may be said, are in request almost every day—I have for some time held that the stump-rooted or Horn varieties are better than the long roots, and this opinion has been gaining greater prominence for the past two or three hot summers. I am of the opinion that they are more easily prepared and less wasteful when they pass to the kitchen, and though their culture needs the same detail, lifting and storing of the matured crop are much less arduous than the deeper-rooted Carrots demand.

The long Carrots are in most cases grown for winter use, the stump-rooted types finding favour for the summer months only, and often these are sown in small quantities, so that the roots may be drawn in a young and tender state. Thus treated many fail to learn to what a large size they attain when they are sown fairly early and allowed to develop their true character. It is curious how one clings to old customs and old favourites in the matter of vegetables. So many gardeners follow the same course year after year, and are nervous in making new departures for fear they should not equal the old. I believe this to be the case with the crop under notice. Although Carrots may be said to be an everyday vegetable, it is only in isolated cases where there is a difficulty in maintaining a regular supply, and they are so accommodating that periodical sowings may be continued for six months outdoors.

Many seedsmen have their own specialities in both long and short Carrots. There is, however, a preponderance of the latter, and ample to supply the four seasons of the year in every household from the smallest to the largest. The Early Nantes, which is such a favourite for summer use, makes an excellent winter Carrot, and grows to a size sufficient to meet every cooking purpose, and in suitable soils assumes a colour and shape that can scarcely be surpassed by any other. Williams' Matchless is another beautiful variety, either for summer or winter. Early em, Model, Guerande, Summer Favourite, Improved and Champion

Scarlet Horn, are only a few that occur as one writes, and from which growers may easily suit themselves if they so wish. These remarks, it will be observed, are directed towards the more general adoption of the stump-rooted varieties for winter purposes, and in so doing I am persuaded that if these were compared culturally and economically with the long roots, there would be found a favourable balance in their favour.

Carrots, like Parsnips and Beetroot, are better stored in the soil outdoors, and in lifting and laying them in during the late autumn months, proof can easily be obtained bearing on the question of labour. Such sorts as Long Red Surrey and Altrincham are quite uncalled for in domestic uses, and those who adhere to them for winter storing would be surprised if they took the trouble to compare them point by point with the smaller stump-rooted section.—R. ASHTON.

SOIL FERTILITY.

GARDEN EXPERIMENTS *versus* LABORATORY ANALYSES.

SOME modern scientific authorities who have made the soil in its relation to the production of plants and crops a special study, and who do not conduct analyses as a matter of business, appear to attach much less importance to ordinary analyses of soil in the laboratory than to practical experiments in the garden for determining what particular ingredients the soil lacks for the proper support of different kinds of crops. Mr. Herbert H. Cousins, M.A., Lecturer in Chemistry at the South-Eastern Agricultural College, Wye, has some trenchant remarks on the subject of soil analyses in his Primer, "The Chemistry of the Garden."

While he admits the modern "fertility" analysis, by which is determined the "available" plant food in the soil, is sound and reliable, he does not hesitate to brand the old so-called "complete" analyses, based on the determination of the ash found in plants, as utterly fallacious. He goes so far as to say that those well-intentioned persons who, after consulting Professor Wolff's table of ash analyses of various plants, and founding thereon manure formulæ for the different plants, are "blind leaders of the blind."

Mr. Cousins bases his conclusions on stated "facts." 1, The ash of a plant depends directly on the manures with which its roots come in contact. 2, That as a root is obliged to absorb any different salt in the soil the mineral substances of any kind of plant must be variable. 3, The unknown and highly variable proportions of good constituents in a soil is a serious disqualification of the presumptions of the "plant ash oracle." 6, A large or small quantity of plant food in the ash of a certain plant does not preclude the possibility of the plant with the small proportion requiring as much, or even more, assistance from a particular fertiliser than another plant containing a far larger proportion of the ingredient in question.

He goes on to say "A careful series of field (or garden) experiments will teach a farmer (or gardener) more about the profitable manuring of his crops than all the analyses which have ever been made." After those strong pronouncements our author concludes thus:—"Ancient fallacies die hard; and it is urgently needed that some high authority, such as the Royal Horticultural Society or the horticultural institutions connected with County Councils, should approach this extremely crucial problem of the profitable and rational manuring of garden plants by the *only* sound and certain method possible—namely, careful and scientific experiments on actual cultivations year by year."

If those views were not largely, if not entirely, held by the accomplished Principal of Wye College, Mr. A. D. Hall, he would scarcely have circulated the following instructions under the heading of

EXPERIMENTS ON MANURING.

The following suggestions are intended for gardeners, teachers, and others who wish to illustrate the principles of manuring, or to test by experiment what sort of manuring is likely to answer best on their own soil.

SIZE OF PLOT.—A piece 2 rods (11 yards) by 4 rods (22 yards) is a convenient size, larger or smaller according to the number of trial plots.

SITUATION.—Choose as uniform and level a piece of ground as possible, which has all been cropped in the same way in the previous year. It is preferable that the long side of the plot should run across any slope in the ground that may exist, and the drills should run the long way of the plot. If the land is level the drills should run N. and S., rather than E. and W.

CULTIVATION.—The artificial manures used require just as much cultivation of the soil as dung; the whole plot should be dug and bastard trenched in the winter or early spring. This ought to be done in one operation; if part is done at one time and part at another, variations may be set up in the crop. If the digging cannot be done

at once, let the successive pieces run as the drills will be drawn later, *i.e.*, the long way of the plot.

TIME OF PUTTING ON THE MANURES.—When lime, basic slag, or kainit is used they should be sown broadcast before digging in the winter. Superphosphate should be put on just before the first sowing and scuffed in with the hoe. Nitrate of soda and sulphate of ammonia should be reserved till the plants have made a leaf or two.

SUITABLE CROPS.—Beans, Peas, all the Cabbage tribe, Parsnips, Turnips, Potatoes, and Onions.

MANURES REQUIRED.—Nitrate of soda or sulphate of ammonia to supply nitrogen. Basic slag or superphosphate to supply phosphoric acid. Kainit to supply potash. Lime.

It will depend on the amount of lime in the soil whether nitrate of soda and basic slag, or sulphate of ammonia and superphosphate, should be used. If there is any doubt on this point, an even slice of the soil to a depth of 9 inches, and weighing at least a pound, should be sent to the South-Eastern Agricultural College, where an examination of the soil will be made and advice sent.

The quantities required are 2 ozs. per square yard of nitrate of soda, sulphate of ammonia, and kainit; 4 ozs. per square yard of basic slag or superphosphate, and 1 lb. per square yard of lime.

Of course, many other manures will supply nitrogen and phosphoric acid, but the above are the most convenient.

PLAN OF EXPERIMENT.—A. *Simplest, 4 or 5 plots only.*

Plot 1.—Receives nothing.

Plot 2.—Receives basic slag (or superphosphate) only.

Plot 3.—Receives nitrate of soda (or sulphate of ammonia) only.

Plot 4.—Receives basic slag (or superphosphate) and nitrate of soda (or sulphate of ammonia).

Plot 5.—Receives basic slag (or superphosphate), and nitrate of soda (or sulphate of ammonia), and lime.

Plot 5 may be omitted, or a plot may be added which receives dung.

B. *More complete, 6 or 7 plots.*

Plot 1.—Receives nothing.

Plot 2.—Receives basic slag (or superphosphate) and kainit, *No nitrogen.*

Plot 3.—Receives nitrate of soda (or sulphate of ammonia) and kainit. *No phosphoric acid.*

Plot 4.—Receives nitrate of soda (or sulphate of ammonia), and basic slag (or superphosphate). *No potash.*

Plot 5.—Receives nitrate of soda (or sulphate of ammonia), and basic slag (or superphosphate), and kainit. *Complete.*

Plot 6.—Receives nitrate of soda (or sulphate of ammonia), and basic slag (or superphosphate), and kainit, and lime.

Plot 7.—Receives dung only.

Interpretation.—The effect of the manures is to be learnt by comparing the completely manured plot 4 in A, 5 in B with each of the other plots. Taking the B plan as an example:

5 v. 1 shows effect of artificial manures.

5 v. 7 shows comparison between artificials and dung.

5 v. 6 shows effect of lime.

5 v. 2 shows effect of nitrogen.

5 v. 3 shows effect of phosphoric acid.

5 v. 4 shows effect of potash.

MANAGEMENT.—Divide the long side of the piece into as many equal parts as there are to be plots, and at each point of division drive a stout stake 3 feet long till 1 foot of the stake is out of the ground. Repeat on the other side of the plot. When sowing the manures stretch a line across the piece from stake to stake to mark out the plots. Only sow manure when there is no wind.

Draw the drills the long way of the piece, so that each crop runs across all the plots, as shown in the diagram.

Plot 1.	Plot 2.	Plot 3.	Plot 4.	Plot 5.	Plot 6.	Plot 7.	
.....	Peas.
.....	Beans.
.....	Parsnips.
.....	Turnips.
.....	Cabbages.
.....	Potatoes.
.....	Onions.

When the seeds are up, stretch the line from stake to stake again, and scuffle along the line with a hoe to mark plot from plot.

When planting out Cabbages, &c., setting out Turnips, &c., see that there is an equal number of plants in each plot.

It is best to divide the nitrate of soda for each plot into as many equal parts as there are drills, and put each drill's share on at the proper time—*i.e.*, when the plant is beginning to grow a little above ground.

The root crops should be weighed, the whole of one or more drills should be lifted at a time, the roots from each plot made into separate heaps, rubbed to free from soil, and weighed.

The stumps should be left down at the end of the season, and the same manures applied to the same plots the following year, but the position of each crop should be shifted. In a year or two the effect of each manure will be plain to the eye; in the first season the effect will probably only be seen in the weight.

On application to the South-Eastern Agricultural College any further information that is required will be gladly sent.*

THE YOUNG GARDENERS' DOMAIN.

CARROTS.

At present Carrots are grown more or less in every garden, as they are always found useful. For early sowings a hotbed should be formed of leaves and litter some time prior to sowing the seeds, as it will give it time to settle and cool down. About the middle of January is a very suitable time to make the first sowing. Sow thinly in rows about 8 inches apart in light soil, and do not cover the seeds too heavily. Give a thorough watering, but afterwards be sparing with water till the seedlings appear above the surface. Protect the seeds at night, or any other time if the weather be severe, by covering the frames with mats or litter. Sowings should be made fortnightly if the supply has to be maintained.

About the middle of February sowings can be made on sheltered south borders if the soil is light. Have the rows about the same distance asunder as above mentioned, and thin the seedlings a little when they are large enough to handle. The month of March is the time for the main crop to be sown, so prior to this the ground should have been thoroughly prepared. No hard and fast rule can be made as to the date they should be sown, as it greatly depends on the weather; but always choose a fine day when the ground is in workable condition, for sowing when it is raining, or the ground is wet, will cause the seeds to come up very irregularly. Have the rows at a distance of 12 inches apart, thus giving plenty of room for the necessary work during the summer months.

When the seedlings are up, and the rows can be distinctly seen, it is good practice to run the hoe between them to loosen the soil and destroy weeds. Thin a little when the plants are large enough to handle, and always choose a dull or showery day for this operation. During the growing season it will prove beneficial to the plants if a little soot is scattered between the rows and hoed in. Before any frosts set in the roots should be lifted and stored in sheds for winter use, and if they are laid in sand they will be found to keep in a good condition. —P. R.

THE CROTON.

With the advent of the new year, those whose demands for decorative plants are large will certainly turn their attention to this valuable family. For use during the dark winter months a well coloured and finely balanced Croton is difficult to beat. They are easy rooting plants, and are propagated by cuttings and by "ringing." The former method is employed for small stock, while the latter process is that mostly employed for large heads.

In taking cuttings care must be observed to obtain the best coloured tops, remembering that the leaves of the cutting form the foundation of the specimen later on. Insert the cuttings singly into thumbs, and plunge in a brisk bottom heat. In a few days they will be found to have emitted roots, and must then be gradually hardened to the temperature of the stove.

If "ringing" is the mode employed, run the knife round the bark twice, in parallel lines about one-sixth of an inch apart, taking the bark out between the cuts. Have a handful of moss ready, and tie round the cut, shaking in a little silver sand. If kept moist the plant will soon throw out roots, and can be cut off, potted, and treated afterwards in the same manner as the cuttings. When well rooted the plants may be shifted into 48's, this size being found the most useful for general use. If larger are required they may be repotted as the roots find the sides of the old receptacle. For compost, use two parts of good loam to one of peat, with a sprinkling of silver sand, and a little Clay's fertiliser. Grow the plants in a temperature of 70° Fahr., with a rise to 85° by sun heat.

To obtain the fine markings and colouring of the plants they must be exposed to all the sun and light obtainable; only some of the more delicate varieties will need a slight shade during the hottest part of the day. Great attention should be paid to the cleanliness of the

* Possibly this may only apply to persons in Kent and Surrey, by the County Councils of which the College is supported.

plants; red spider especially must be battled with. Apply the syringe thoroughly twice a day, getting well underneath the leaves. Being gross feeders, frequent applications of liquid manure are necessary when the pots become full of roots. As the days shorten the syringe must be used more sparingly, allowing the tissues of the leaves to harden somewhat, thus preparing the plant for use indoors.

While small leaved varieties are the most useful for table work, the broad leaved ones should not be overlooked, as their noble appearance contrasts well with the light graceful look of their neighbours. *Angustifolius*, *Aigburth Gem*, *interruptus aureus*, *picturatus*, and *aigburthiensis* are good narrow leaved varieties, and *Emperor Alexander III.*, *Queen Victoria*, *superba*, *undulatum*, and *Mrs. Swan* are well worth growing as broad leaved types.—H. C. D.



HARDY FRUIT GARDEN.

Apricots.—Examine the trees on walls before the buds swell and the flowers show to see that no superfluous wood is retained. Superfluous wood will be that which produced the last season's crop in cases where the fruit was borne on young shoots, and these can now be dispensed with, training in their place successional growths all over the trees, furnishing the available space with fruiting shoots. Apricots, however, do not usually carry the whole crop on the previous year's shoots. The trees bear freely on spurs, some of which form themselves naturally, while others may be induced to do so by shortening the superfluous young shoots to within an inch of their base. These are termed artificial spurs, and increase the productiveness of the trees provided they are not originated too thickly. If weak or exhausted branches have to be cut out the remainder will require re-arranging. Young shoots may be trained in about 4 inches apart, and if shortened, prune to a triple bud.

Peaches and Nectarines.—The pruning, re-arranging of branches, and training of these fruits on outdoor walls must follow attention given to Apricots. Cut out old and half-exhausted, also weak and immature wood, and thin the remainder if likely to be too crowded. The young shoots may be secured 4 inches apart. The best fruit is produced on the young wood, spur growths not generally being originated on Peaches and Nectarines. Before all the young wood not wanted is cut out dispose the main branches on the wall, secure them, and follow with the secondary branches, then nailing in the fruiting wood at the distance of 4 inches apart. The superfluous shoots may be cut out entirely. As a rule it is not necessary to shorten them unless there is not sufficient room for the shoot, or it is of too strong character.

When shortening, care must be exercised not to cut the shoots to a blossom bud. It must either be to a single wood bud or a triple bud, as it is very necessary for the extremity of each shoot to form growth which shall extend and attract sap through the whole shoot for the benefit of the fruit. A triple bud consists of two fruit or blossom buds with a wood bud in the centre. Wood buds may be distinguished by their character, as they are thin and pointed, and contain a growing point, whereas blossom or fruit buds are round and plump, enclosing stamens, petals, and pistil, the essential reproductive organs, in a rudimentary state.

Avoid fastening the shoots tightly with the shreds or placing nails in extremely close proximity to the branches. After the training has been finished it is a good plan to syringe the trees with a mixture of sulphur and soapy water; but if the trees have been seriously infested with red spider or any other pest they should receive a preliminary dressing with a stronger and more effective insecticide prior to re-arranging and training.

Pruning Gooseberries.—When the winter pruning has been deferred to the present time, the first opportunity should be taken to carry out the work. Bush trees may first be subjected to a general thinning, reducing the material in the centre as well as branches near or descending to the ground. A fair quantity of young shoots ought to be retained without any shortening; some may be left at 6 inches, and the remaining pruned back to form spurs, cutting them to within an inch of their base. Large bushes ought to have a space of 6 feet between them. It is impossible to properly thin and prune the bushes if they are allowed to remain too thickly together.

Gooseberries are often treated on the same system as Red and White Currants, but it is a mistake to do this if the buds are attacked by birds, as there will be few left to produce fruit. The best system is either to thin out the bushes by the removal of the most crowded portions, or to reduce the superfluous shoots to within an inch of their base, the others being left at full length or partially shortened, but it will be useless to do the latter with any shoots denuded of buds.

Red and White Currants.—The pruning of these should now be completed. In a properly established bush the branches will have been originated at equal distances, hence no thinning-out of main branches is, as a rule, necessary. In time, however, branches deteriorate, making it imperative to cut them out, replacing them with strong young growths from the base. The side shoots on the established main branches ought now to be shortened to within an inch of their base. The leading shoot on each branch must also be pruned closely if extension has ceased, but in the case of young branches the leading shoot is annually shortened to 8 or 9 inches until the full length of the main branch is reached. The side shoots are pruned in the usual way, but summer pruning is also essential.

Black Currants.—The vigorous growths produced by Black Currant bushes annually are the most suitable for bearing fruit. If the bushes are kept well replenished with such, without overcrowding, there will be ample crops of fruit. The old shoots may be freely cut out, as they only serve to crowd and weaken. Dead wood must be removed whenever seen, and weak shoots ought to be dispensed with.

American Blackberries.—The annual growths of these are long, and in pruning simply require to be shortened one-fourth, as this portion is rarely if ever sufficiently ripened to bear fruit. The fruiting canes of the previous year may be cut out entirely.

FRUIT FORCING.

Cucumbers.—*Raising Plants in Frames.*—The old-fashioned and still excellent method of growing Cucumbers in pits and frames has not been entirely superseded by the hot-water pipes system, and persons who do not sow seeds before February often cut fruits quite as early as some do with an inadequacy of heat-furnishing material, and who sow at the new year. The material for making the bed for raising the seedlings being in a fit condition through turning and mixing with leaves, so as to induce a sweet regular heat, a site for a bed should be chosen with a full southern aspect, and having shelter to the north, such as that of a hedge or wall. If the ground be rather higher where the bed is to be formed than the surrounding level all the better. Mix and beat the materials well down as the work proceeds, using the fork, and making the bed about 5 feet high at the back, and 4 feet 6 inches in front, which will allow for settling, as it will do about one-third. A few Pea sticks placed across and along the bed at intervals not only prevent overheating, but admit the heat from the linings being conveyed to the interior of the bed.

For early work frames with an inner lining are advantageous. They are formed by placing quarter-inch boards 11 inches in depth at the back, and 9 inches in front, with the bottom edges level with the bottom of the box, and then the boards, which form an inch cavity all round the inside by affixing them on strips of wood an inch wide and thick nailed on the inside of the box, and thus top heat is furnished. In a week after making up the bed and putting on the frame and light, level the surface of bed, replace the box and put in sufficient sweetened fermenting material to raise the inside to within 4 inches of the inner frame or casing, placing partially decayed rather dry leaves or sifted spent tan on the manure for plunging the pots.

Peaches and Nectarines.—*Earliest Forced House.*—The trees will need an occasional syringing after the fruit is set to assist them in casting off the dead remains of the flowers, and when the weather is bright they should be syringed every morning and afternoon when the fruit is swelling freely in order to keep down red spider. If, however, the weather be dull, the syringing must be practised early in the afternoon, so that the trees may become fairly dry before night, or if that does not take place, the afternoon syringing must be dispensed with, damping the paths and borders instead, as keeping the trees dripping with water through the night causes weak growth, thin foliage, and discoloured points of the leaves. Water the inside border with liquid manure, which will assist the fruit in swelling, especially in the case of weakly trees long subjected to repeated forcing.

Vigorous trees will not require stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process. Remove a few of the worst placed and surplus fruits, but thin carefully until the fruit is the size of a small marble. Disbudding also must be performed carefully and gradually, leaving a growth at the base of each bearing shoot, and another at its extremity, or at least level with the fruit. The shoots retained for attracting the sap to and supporting the fruit should be stopped at the third leaf, but the basal shoots must be trained to take the place of those now bearing fruit. Shoots upon extensions must be left 12 to 15 inches distance apart to form the bearing shoots of the future. It is a great mistake to crowd the trees with growth for which there is not space enough to allow of its full exposure to light and air; therefore avoid overcrowding, seeking to maintain an equal balance of growth throughout the trees, and its solidification by judicious ventilation.

Second Early House.—Trees started at the new year will be in blossom, and should have a temperature of 50°, 5° less on cold nights, 50° to 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise above 65° without full ventilation. Lose no opportunity of admitting air, ventilating from 50°, avoiding, however, cold currents, and leave a little ventilation constantly at the apex of the house. Damp the surfaces occasionally to secure a genial atmosphere, but avoid a close saturated one. Shake the trees on fine morning to disperse the

pollen, or brush the blossoms over lightly with a rabbit's tail mounted on a small stick, or apply the pollen to the stigma with a camel's-hair brush.

Houses Started Early in February.—The trees to afford fruit in July must now be started, they having commenced to swell their buds naturally. Syringe the trees until the blossom buds show colour, but not too frequently, always allowing them to become dry at night. Discontinue the syringing after the anthers show, but sprinkle the paths and borders once or twice a day to maintain a genial condition of the atmosphere, avoiding a close stagnant one. If the flowers are very numerous thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder, enabling them to set better. Examine the trees closely, and if there be any aphides fumigate with tobacco or other insecticide, so as to destroy them before the flowers expand. Maintain a temperature of 40° to 45° at night, and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat with free ventilation. On cold nights the temperature may fall to 45°, or even less, also 50° by day when cold, allowing a little ventilation constantly at the top of the house.

THE BEE-KEEPER.

PRESERVING THE LIVES OF BEES.

In a general way bee-keepers are on the alert to strengthen their stocks when the honey harvest is drawing near; but do they take steps to preserve the lives of the bees during the dark dull days of winter, when the queen has ceased her maternal labours for a season, and each bee lost or destroyed means one unit less to preserve the warmth of the cluster? This is a subject that requires more than passing notice. We are convinced it is only necessary to draw the notice of bee-keepers to this important matter for them to realise how beneficial it would be to the bees if more attention were given to them at this season.

Preserving the lives of the bees may be done in a variety of ways. Should there be a fall of snow and the sun shine brightly for an hour or two during the middle of the day, the bees will leave their hive by hundreds, many of them never to return. If anyone doubts this fact they can soon be convinced, after a fall of snow, by observing how numerous the dead bees are in close proximity to the hives. Stocks may be seriously weakened from this cause alone. The preventive we have given in previous notes.

Serious losses also occur from other causes which are not so visible to the ordinary observer—namely, the numerous bees destroyed by birds. In the autumn birds are sometimes troublesome in this respect, but as the old bees are then dying at a rapid rate there is not much harm done. During November and December the stocks do not seem to be much molested. Directly, however, the days begin to lengthen they swoop down to the hives by the score. The chief culprits are the tits and common house sparrows. A pair of the former will probably destroy as many bees in half an hour as half a dozen sparrows would in a day.

It is interesting to watch the tits when there are not many bees on the wing, and to observe their cleverness in enticing the bees to leave the hives. They work most systematically. If there are thirty hives in a row they will carefully examine the surroundings of each to see if there are any stray bees that are unable to return to their hive. These are at once taken to the nearest tree and dissected. The head and sting are discarded, and only the abdomen is consumed. We have seen a bird treat half a dozen bees in this manner in less than a minute; this was after snow, when numerous bees had been tempted by the bright sunshine to leave their hive and had become benumbed.

The tits, however, have found out that it is only necessary to make a noise at the entrance to the hive to attract the attention of some of the bees. Thus they fly from one alighting board to the other, tapping with their beaks as they alight. Any stray bee is immediately seized and treated as described above. The birds appear to be most ravenous in this respect, and unless steps are taken to destroy them it is only reasonable to suppose that a strong colony of bees may be much reduced from this cause alone.

Sparrows do not watch the hives so closely as the tits, as they can obtain a variety of food. It is, however, necessary, to take some steps to destroy both the tits and the sparrows where they are so troublesome. The former are easily taken in an ordinary V-shaped mousetrap baited with meat or bread. We never interfere with them at any other time, as they doubtless do much good in other directions. Sparrows can also be trapped in the same manner, but they are more wary. If their roosting places are observed, they may be easily netted on dark nights.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

F. Dicks & Co., 66, Deansgate, Manchester.—*Seeds.*
Dobie & Mason, Oak Street, Manchester.—*Seeds.*
Hogg & Robertson, 22, Mary Street, Dublin.
E. W. King & Co., Coggeshall, Essex.—*Seeds.*
J. Sharpe & Son, Bardney, Lincoln.—*Seeds.*
J. Turner, Wetherby, Yorks.—*Seeds, Plants and Trees.*
Vilmorin-Andrieux & Co., 4, Quai de la Mégisserie, Paris.—*Seeds.*



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Apple Hollandbury (D. W.).—The following description of this handsome Apple is from Dr. Hogg's "Fruit Manual":—"Fruit, very large, 3½ inches wide, and 3 inches high; roundish and flattened, with irregular and prominent angles or ribs extending from the base to the apex. Skin, deep yellow, tinged with green on the shaded side, but bright deep scarlet where exposed to the sun, generally extending over the whole surface. Eye, closed, with long acuminate segments and set in a wide and deep basin. Stalk, short and slender, inserted in a deep funnel-shaped cavity, which is generally lined with russet. Flesh, white, with a slight tinge of green, delicate, tender, and juicy, with a brisk and pleasant flavour. A beautiful and showy Apple for culinary purposes; it is in use from October to Christmas. The tree is a strong and vigorous grower, but not a very abundant bearer. It succeeds well on the Paradise stock.

Average Crop of Mushrooms (Jardinière).—A full crop is, as we have determined by several years' experience, 1 lb. per square foot of bed surface, the Mushrooms being full grown or "broilers." Sometimes this rate of production is exceeded, though not often; and in most cases "buttons" are found detracting somewhat from the weight, yet not always of the value. There is, however, a great difference in the yield of beds, and records of minimum produce are necessary to strike an average. These we cannot determine. We found 4½ lbs. per square yard of bed, or half a pound per square foot, profitable culture. At this rate your bed of 800 square feet should yield 400 lbs. of Mushrooms.

Old Plum Trees against a Wall (Idem).—The procedure you illustrate and describe is correct for trees making strong growth and not producing fruit for many years. The manipulation of the heads of the trees also appears from the sketches before and after pruning to have been judicious as far as it goes, but we would have preferred to cut the leader back one-third of its length and the side branches two-thirds, and from these taken forward well placed growths from each. Young leading and side branches would then have been secured, which in two or three years would form spurs and give fruit abundantly. As it is, the side branches cut off close to the stem cannot produce young growths, though these may issue at the point on the stem, and the more promising should be retained in place of the branches cut away, having them 12 inches asunder. A portion of the bushy head should be left on the top of the branches, for the object is, or should be, to get new growths; train them fan-fashion from as near the base as possible, then the trees will take on a new lease of life and give good fruit.

Crotons (Young Gardener).—Where a brisk moist heat can be maintained young healthy plants may be potted at once. Be careful that the soil in which they are to be potted has been thoroughly warmed, or a severe check may result. The plants should be potted in the house in which they are to grow. Careful watering is necessary after repotting at this period of the year. Plants that have become bare at the base may be notched near the top and mossed. As soon as growing conditions are favourable they will form roots, and may be taken off and be placed in small pots, but as in the case of cuttings they must afterwards be watered with discretion.

Stocks for Budding Roses (Homo, S.).—There is no exclusively best stock for Roses. The common Dog Rose of the hedgerows is the sole stock used for standards, as no other has been found so suitable in practice. Stocks obtained from seed of this plant, and called seedling Briars, are much favoured in some establishments for dwarf Roses, particularly Teas. The Manetti is also largely employed for dwarf Roses. It is not, however, so popular as formerly, as the strong-growing Roses attain too much vigour for ripening the wood, and the vigour derived by the weak growers is only transitory, and thus is not approved for all varieties or for all situations. The De la Grifferaie has been used to some extent, and has gradually risen in favour, especially for Tea-scented Roses. We have had equally good results from Briar stocks both raised from cuttings and from seed.

Aralia Sieboldi (R. F.).—The plant presented the appearance of having received a check to growth, but there was no evidence of this taking place at a particular stage, all the leaves being similarly affected. It was not very well rooted, having recently been repotted, though the roots, both in the old ball and in the new soil, were, so far as we could discover, quite healthy. On the leaves we noticed a slight rust, such as occurs in Begonias infested by *Tarsonymus* species, but we failed to discover the pest. Perhaps vaporisation with nicotine would give relief, repeating two or three times at intervals of a few days. It is a very difficult pest, however, to eradicate when it obtains a footing upon plants, and spraying with the nicotine diluted to a safe strength, say 1 part in 100 parts water, and wetting the plants on the under as well as the upper surface of the leaves, appears the best preventive and remedy. We have also found tobacco water useful against it.

Calcined Bones as Manure (J. C. S.).—The burnt or calcined bones are an excellent phosphatic manure, bone-ash ranking higher than mineral phosphate. The burning or calcining destroys the organic matter and nitrogen but leaves the mineral constituents of the bone, mainly tribasic phosphate. As you say the bones would have to be powdered, we presume they have not been reduced to ash, but are practically bone charcoal. You may use the burnt bones either rough or powdered, the phosphoric acid being yielded much slower by the former than the latter, 4 ozs. being a good dressing per square yard for flower beds and fruit borders, but double quantity may be used with advantage in many cases, pointing in and mixing with the surface soil. For plants in pots a handful or 4 ozs. may be added to each peck of potting soil. You will of course add other fertilisers to the compost.

Mixing Lime with Soil for Tomatoes (R. F.).—The quantity of hot lime, or unslaked—that is, freshly burned—is 1 to 1½ lb. per square yard; the greater quantity when the soil is heavy. The lime should be placed in small heaps, and be sprinkled with sufficient water to cause a fine apparently dry powder. It should then be spread evenly on the ground, leaving it there for a day or two, and then digging in, taking small spits, so as to mix evenly with the top soil. Salt does good in preventing a rank growth of Tomatoes in rich soil, and should be applied a month or six weeks in advance of planting, 3½ lbs. per rod being sufficient, distributing evenly on the surface, and leaving there, as the rain or watering will wash it in fast enough. But kainit is better, at the rate of 3½ lbs. per rod, and instead of lime basic cinder phosphate, 14 lbs. per rod, and there will be supplied phosphoric acid, potash and magnesia, as well as lime and salt, quite sufficient in most cases as correctives. If the soil is very rich, and inclined to sourness, double the amounts of kainit and basic slag may be used, pointing in after applying, and a month or six weeks in advance of planting.

Insects in Soil (H. M.).—The specimens are of *Lipura fimetaria*. It is very common, and may be found in damp earth throughout the year, often engaged in browsing upon Carrots, Potatoes, or other roots. It is usually associated with dead and decaying vegetable matter, and is prevalent on the root-stocks of Primulas, and also on Cyclamens and Freesias. The pests are easily killed by hot water, at a temperature of 110°, which does not injure the roots of plants to which it is applied, except those of a very delicate nature. Lime water made by placing a lump of quicklime about the size of a clenched hand in about 3 gallons of water, stirring well, leaving exposed three or four days, then using the clear liquid only, as in an ordinary watering, will either expel or kill worms, also root mites, and the "white worms" which sometimes cause sickness in plants. There was a specimen in your soil of the "white worm," *Enchytræus Buckholzi*, which attacks the roots of various plants, and appears to like the more or less decayed, rather than the healthy. Not one of the pests named would arise from the use of liquid manure from a tank in which soot and sheep droppings in a bag were placed. Only healthy and free-growing plants can profit by liquid manure, hence it must be used with judgment, and not given to everything indiscriminately.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (N. S. C.).—1, *Freesia refracta alba*; 2, *Begonia nitida*; 3, *B. Gloire de Lorraine*; 4, *B. Gloire de Sceaux*; 5, *B. metallica*; 6, unrecognisable. (W. E.).—1, *Raphis flabelliformis*; 2, *Phoenix rupicola*; 3, *Areca lutescens*; 4, *Kentia Belmoreana*; 5, *Cocos Weddelliana*; 6, *Chamærops humilis*. (Amateur).—1, a poor form of *Odontoglossum crispum*; 2, *Cypripedium insigne*, true; 3, *Cymbidium Lowianum*.

COVENT GARDEN MARKET.—JANUARY 31ST.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case	4 0	to 15 0
" Canadian, barrel ...	10 0	15 0	Melons each	0 6	1 6
" Nova Scotian, barrel	10 0	17 0	Oranges, per case	5 0	15 0
Cobnuts per 100 lb....	60 0	70 0	" Tangierine, box...	0 6	1 9
Grapes, black	1 6	4 0	Pears, Californian, case...	6 0	9 0
" Muscat... ..	2 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	6 0	to 0 0	Herbs, bunch	0 2	to 0 0
Asparagus, green, bundle	5 0	5 9	Leeks, bunch	0 3	0 0
" giant, bundle	15 0	20 0	Lettuce, doz.	1 6	2 0
Beans, Jersey, per lb. ...	2 0	2 6	Mushrooms, lb....	0 6	0 9
" French Kidney, lb.	1 6	0 0	Mustard and Cress, punnet	0 2	0 0
" Madeira, basket ...	2 0	2 6	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz....	0 6	0 0	Parsley, doz. bunches ...	2 0	4 0
Brussels Sprouts, ½ sieve...	1 6	2 0	Potatoes, cwt.	2 0	5 0
Cabbages, per tally ...	7 0	0 0	" Teneriffe, cwt....	18 0	28 0
Carrots, per doz. ...	2 0	3 0	Seakale, doz. baskets ...	12 0	15 0
Cauliflowers, doz. ...	2 0	3 0	Shallots, lb.	0 3	0 0
Celery, per bundle ...	1 0	1 9	Spinach, per bushel...	3 0	5 0
Cucumbers, doz. ...	4 0	8 0	Tomatoes, per doz. lbs. ...	6 0	8 0
Endive, doz.	2 6	0 0	Turnips, bunch... ..	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Maidenhair Fern, doz. bnch	8 0	to 10 0
Arums	6 0	8 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch...	2 0	2 6	" Yellow, doz. bnchs.	4 0	6 0
Bouvardia, bunch ...	0 6	0 9	Mimosa, per bunch ...	1 6	2 0
Carnations, 12 blooms ...	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Cattleyas, per doz. ...	12 0	24 0	Narcissus, white, doz. bun.	2 6	6 0
Christmas Roses, doz. ...	1 0	2 0	" Yellow, doz. bunches	4 0	6 0
Chrysanthemums, white			" double, doz. bunches	2 6	4 6
doz. blooms	6 0	9 0	Odontoglossums	5 0	7 6
" yellow doz. blooms	5 0	8 0	Pelargoniums, doz. bnchs	8 0	12 0
" bunches, var., each	1 6	3 0	Poinsettias, doz.	12 0	18 0
Daffodils, double, doz. bnch	8 0	10 0	Roses (indoor), doz....	6 0	8 0
" single, doz. bnch.	15 0	18 0	" Red, doz.	6 0	8 0
Eucharis, doz.	8 0	10 0	" Safrano, packet ...	3 6	4 0
Gardenias, doz.	6 0	8 0	" Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			" Yellow, doz. (Perles)	5 0	7 6
bnchs.	6 0	9 0	" Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	6 0	8 0	Smilax, bunch	5 0	7 6
Lilium Harrisii, 12 blooms	8 0	10 0	Tulips, scarlet, bunch.....	0 6	0 8
" lancifolium album ...	3 6	4 6	" yellow, bunch	1 0	1 6
" rubrum	3 6	4 6	" bronze, bunch.....	1 0	1 6
" longiflorum, 12 blooms	8 0	12 0	Violets, Parma, bunch ...	4 0	6 0
Lilac, white, bundle ...	5 0	6 0	" dark, French, doz.	2 6	3 6
" mauve, bundle ...	8 0	10 0	" " English, doz.	2 0	3 0
Lily of the Valley, 12 bun.	9 0	18 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Crotons, doz.	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz.	8 0	12 0	Lycopodiums, doz.	3 0	6 0
Daffodils, pot	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz.	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	20 0
Ferns, var., doz.	4 0	18 0	Solanums per doz.	9 0	18 0



AGRICULTURE IN QUEENSLAND.

WE live in a tiny island, in the least of the continents, far out to the N.W., and yet we wield such a power and possess such vast tracts of land as to influence the whole civilised world. Practically we have annihilated time and space. We are in close touch with all our colonies, and there are few families who have not sons and daughters in all places of our dominion. It does not feel so much like banishment to live in a country of English-speaking folk, where the manners and customs are like those at home, and the climatic conditions much the same. The ships are so well found, and the voyage is made so quickly, that people think no more of a run to Australia than they did fifty years ago of one to America.

We have just been reading with great interest some accounts of the agricultural situation in the great province of Queensland that were supplied by the Agent-General for that country. Perhaps we might suggest that the reader turns to the Atlas, he will then see how vast a province this is, stretching from the temperate to almost the torrid zone.

Its area is 668,497 square miles, as against England and Wales with only 58,186 square miles, so there is no lack of space or variety of climate. It has a good seaboard, 1500 or 1600 miles of South Pacific, and the greater half northwards of the Gulf of Carpenteria. In 1891 the chief exports were wool, gold and sugar; it is now developing and opening out many other sources of revenue, things that we do not count as among our agricultural products.

It appears that Queensland, like other parts of Australia, is subject to long and excessive droughts, and that the droughty season of 1898 sadly affected the pastures and caused a great falling off in the export butter trade. This butter has made for itself a name and place in the London markets, and it is now one of the staple industries of Queensland. The farmers are quite alive to the situation, and are endeavouring by breeding and better care of their cattle and by the best of dairy management to secure a first-class article. Shipments are made fortnightly to Great Britain. In 1898 in spite of the drought, 391 tons were forwarded to England, and it is expected when the estimates of 1899 are ready that it will be found that something like 1000 tons have been exported.

Really good butter will always command a good price. We hear far less nowadays of butter at 5d. and 6d. per lb.; the seasons have not altered, but the management has altered—the work of the travelling dairy school is beginning to tell.

The next item on the list is foreign to us. We do not cultivate the plant except as an ornamental and sweet-scented addition to our gardens, or as a personal indulgence of doubtful benefit. The genial warmth of Queensland is well adapted for the growth of Tobacco, which generally proves a paying crop. There is a feeling that the soil is good enough to produce a first-class variety, and American factories have been started as well as those of home firms. The Government has felt the time was ripe for the employment of an expert instructor in the art of Tobacco culture, and men of capital are now inclined to embark in the undertaking. It appears that cigar Tobacco, which we suppose is "best extra," can be grown as a remunerative crop.

We have heard of an English cigar industry where, at any rate, the outer leaf was guileless in the extreme. We believe it is in Sir John Astley's life that he makes mention of seeing some industrious and ingenious people busily collecting in Bushy Park the fallen and perfect Chestnut leaves, which were to do duty in the manufacture of high-class cigars. We should prefer "pure" Queensland to "home-grown" Bushy.

After tobacco comes coffee, quite in order, and we should hail with

pleasure any new development that would make that fragrant drink cheaper. Really good coffee is costly—that is, in proportion to other drinks of a like nature.

Tea may be weak and void of sugar and cream, and yet very drinkable. Coffee must be of the best, strong, and with flavour developed by pure sugar and rich cream. It is dearer per pound than good tea, and so much more is required to make a palatable drink. It is one of the best and most active of stimulants, and has many other excellent medicinal virtues.

At present not a great deal of Queensland coffee has found its way here. What has come has been much appreciated, showing that the culture and the soil are both right. Government has appointed a qualified instructor. The home consumption is so great that that will have to be satisfied first. Will it be labelled "finest Australian Mocha," or what? We think there is a future before these Australian coffee growers, but we will beg them never even to experimentalise in chicory growing. It is the chicory that gives the indigestion, not the pure wholesome coffee, and it is the chicory that has in so many instances got coffee its bad name. We don't want the coffee of commerce in smart tins or packets, we want the real thing, and if our colony can send it we venture to say it will find a good market.

Still the breakfast table—what would it be without "piggy?" How good on a cold morning is the sizzling of the rashers; how delicious the thin red and white slice from a well cured well boiled ham. We never really tire of pig in its multifarious forms. It comes in for so many dishes, and we are getting a wee bit sick of the Chicago variety. If our own people can send it us at reasonable price and good quality, we can do with it. Articles of daily consumption need only be good to find ready markets.

These cute Australians have taken advantage of the troubles in the Philippines, and have practically got that trade. In 1896 export bacon and ham amounted to £7904, in 1898 to £32,033. Lard, too, is a feature of the trade, though we have no statistics given. That, too, is a need in every household, and a growing need, as every year sees a little increase in the quality of our style of living. Prosperity and good wages are doing this. The table of to-day is a very different thing from the table of twenty years ago. This applies mainly, of course, to the lower and middle classes, and they are numerically the greatest consumers.

The cultivation of Rice, too, has got a firm foothold. Rice and Wheat are always in demand, and will be. The northern part of the province is best adapted for its cultivation, and the cultivation is going by strides. We should like some more information as to the price of land, the chance of opening for our young men, and a few other particulars of a like nature. We have plenty of good farmers in England who begin to think their golden days here are over, and if they or their sons could find openings among congenial surroundings in our home on the other side of the world, many would seize the opportunity.

We want some definite information, a greater entering into details, something about the amount of capital needed, and the status we should occupy there; something about land tenure and the burdens on land, the educational advantages, and a clear statement as to the difficulties that would present themselves to new comers. Perhaps some day we may, through the courtesy of the Agent General, have the means of increasing our knowledge.

WORK ON THE HOME FARM.

We have had a week of mild and windy weather which has done much to dry the land, but it is raining heavily again as we write, so there will be little gained. Wind and more sunshine are wanted. Wheat will soon require rolling; it is showing signs of losing root owing to wireworm, and the sharp frosts before Christmas have left the surface of the land very light.

Young seeds, too, will have to be rolled when possible; the plant is certainly thinner than it was, and it never was a good one. On a recent visit to a neighbouring county we walked over several fields of new seeds without finding one that could be called a decent plant. We have known the time when all such would have been ploughed up, but

the price of grain and labour difficulties make farmers anxious to keep as much land as possible in pasture.

Turnips on sandy soils suffered very much from the frost. We have seen Swedes more than half of which are rotten, and as they never were half a crop what are they worth now? The grower has a large head of sheep, having bought heavily in August, hoping that Turnips would improve; he has now only two weeks' keep for his feeding sheep, and unless he can buy roots, which is very unlikely, will have to sell out at a sacrifice. Early sown Barley has of late done so much better, and realised more than the late, that no doubt many farmers are preparing to drill in February.

The spring tooth cultivator is the best implement to break up the Turnip land for Barley; taken across the ploughing twice it lifts the soil and leaves it light and open, so that the surface water drains away well and the land has a better chance of drying. The old duckfoot drag and chisel-harrow are seldom used nowadays.

Peas for pulling green must soon be sown. The land must be manured at once, if it has not already been done. Peas are a paying crop on warm early soils, but are rather speculative, and it is not wise to grow too many. The Telegraph is the variety now most largely grown in some Pea districts for pulling on a large scale.

AUSTRALIAN EXPERIMENTAL FARMS.

THE importance attached by the various Australian Governments to the encouragement of agriculture, especially by the diffusion of practical knowledge, is shown in the fact that in most of the colonies a Department of Agriculture has been established, the official head of which is a member of the colonial ministry. In New South Wales the necessity for providing the means of technical agricultural education, and establishing a college and model farms in various parts of the colony, became fully recognised, and a site suitable for a central establishment was selected at Ham Commor, near the town of Richmond, in the Hawkesbury district, about thirty-nine miles from Sydney, where an area of about 4000 acres was resumed for the purpose. The buildings and furnishings of the college and farm, now in their seventh year of existence, were completed in January, 1896, and officially opened on the 14th April of the same year. Accommodation is provided for ninety-six resident students, and during 1898 there was a full roll.

Theoretical as well as practical instruction is imparted by experts in every branch of agriculture, and experimental work is carried on with cereal and other crops, fertilisers are tested, analyses of soils are made, and the arts of dishorning and speying cattle, with other veterinary surgical practices, are taught. The live stock attached to the farm and college comprises forty-six horses, fifty-seven bullocks, 151 head of dairy cattle, 140 pigs, and 130 sheep. The operations include the cultivation of Wheat for grain and hay, Maize for grain and silage, Barley for grain and fodder, Oats for grain and hay; Lucerne, Hungarian Millet, Rape, Grapes for fruit and wine, Oranges, various kinds of fruit, Potatoes, Turnips, Mangold Wurtzel, Tobacco, Potatoes, Beans and Peas, Pumpkins, Melons, and different kinds of vegetables. There is an orchard, 30 acres in extent, and a vineyard, 10 acres in extent, and the cultivation of plants for the expression of scent has also been begun. Besides the practice of general dairy farming work, instruction is imparted in cheese making, also in the management and breeding of poultry, in the rearing of bees and the preparation of honey for the market, in the killing and dressing of sheep, in the carpenter's and the blacksmith's work, in the construction of fences, and in various mechanical trades.

There are also experimental farms at Bomen, 304 miles from Sydney, in the Murrumbidgee district; and at Wollongbar, 366 miles from Sydney, in the Richmond River district. The former is near the town of Wagga Wagga, and embraces an area of 2460 acres, of which 1200 acres are in cultivation, 1000 acres being devoted to growing cereals, of which 500 acres are for seed Wheat, the remainder being utilised for oaten hay and malting Barley; 85 acres to fruit trees and Grape Vines; and 80 acres to forage plants, such as Maize, Sorghum, Millet, Barley, Rye, Oats, cow Pea, roots and grasses; while 8 acres are under Olive trees, the remaining portion being taken up by irrigation plots, nursery, and experimental plots. The experimental farm at Bathurst, 145 miles from Sydney, is largely devoted to the cross-breeding of sheep, irrigation, fruit-growing, cereal culture, and general mixed farming. The area of the farm is 596 acres. Another farm is situated at Coolabah, in the dry country, about 424 miles from Sydney, where there are about 200 acres in cultivation.

Under the direction of the Government pathologist, investigations are carried out at the laboratories at the Sydney, Bathurst and Wagga Wagga farms. At a laboratory at Pymble, a few miles from Sydney, the diseases of Citrus plants have formed the subject of special inquiry. Operations at Bathurst are not specially directed to agriculture, but are confined more to the diseases of stock; but at Wagga Wagga, the work of the laboratory is mainly in connection with Wheat and other farm crops. At the chemical laboratory in Sydney special attention has been devoted to the grading of Wheats, the strength of flours, and other matters connected with the improvement of Wheats under Australian conditions.—J. PLUMMER, Sydney, N.S.W.

OUR LETTER BOX.

Measurement of Haystack (G. C. F.).—This stack contains about 270 cubic yards of hay. The finer the quality of the hay the heavier it will weigh, but you will be safe in allowing 23 cubic yards to the ton as an average. If it is good old hay 20 yards would be sufficient for a ton. The stack, therefore, contains 12 to 14 tons, according to solidity.

Jersey Cow with Sore Teats (Admirer).—By all means keep the calf away and remove the milk by hand. There must be great delicacy of the teats, and we should advise (failing a good vet. near) that you apply to a chemist, who will probably be able to give some preparation that would strengthen and harden the teat. If the cow is a valuable one, the "vet." had better be called in. The cow is possibly suffering very much more than you expect. Is the milker gentle and careful? In this instance we should prefer a woman. The matter may soon be put right, but it should have immediate attention.

Sheep (J. P., Bucks).—Yours is rather a difficult question to answer. Among practical farmers we have never seen such a book as you want. The management of sheep would be difficult to teach by means of books; it is a question of experience. However, there are several books published written by clever men who know a good deal of the subject of which they treat. You must understand we do not recommend them from personal knowledge. "Morton's Handbook of the Farm," No. II., 2s. 6d.; "Popular Live Stock Series—Sheep," No. II., 1s. Vinton & Co., Ludgate Circus. "Sheep Raising and Shepherding"—Maldon, 3s. 6d. Upcott Gill, 170, Strand.

MURIATE OF POTASH FOR POTATOES.—In your article on "Potato Experiments in Cheshire" you dwell upon the decrease in the yield apparently caused by applying 2 cwts. of muriate of potash, with other manures, in comparison with the yield from 1 cwt., and you sum up against that form of potash. But in 1898, as well as in 1899, at Holmes Chapel 1 cwt. of muriate of potash beat 2 cwts. of sulphate of potash, or 4 cwts. to 5 cwts. of kainit. It is probable that the doubling of the muriate retarded the maturity of the Potatoes; but nothing is more common in experiments with artificial manures than a decrease in a crop when an excessive quantity of a manure highly beneficial in moderate quantity is applied.—W. E. B.

STABLE MANURE FOR WHEAT.—The practice of drawing out stable manure to be spread on stubble ground and ploughed under for Wheat is much less common than it used to be. Farmers have learned that if manure is ploughed under in the autumn it does very little good to the Wheat crop, and is often absolutely injurious, as it makes the soil above it hold much more moisture than it otherwise would. The soil beneath the seed bed of 2 inches should be left as firm as possible in autumn for any winter grain. It may, however, pay to use it as a top-dressing to make a large Clover growth. For the Wheat crop itself 200 lbs. of phosphate per acre drilled with the seed is better than double that value of stable manure.—("American Cultivator.")

DRAINING.—When setting about draining the first requisite is to haul the pipes, and as land which has to be drained is as a matter of course wet, there is sometimes difficulty in getting the pipes on. Therefore when opportunity offers through frost or a spell of dry weather the hauling should go on with despatch. There are certain clay lands that become sterile if the excess of water is not drawn off, and here draining should be done with promptitude, thoroughness, and with really good hard burnt pipes. Pipes properly burnt will be tolerably sound in the ground for half a century, while middling burnt ones crumble down in a year or two. As to depth of draining, it is the most important matter of all. The more clayey the soil the less porous it is, hence the less capable of draining off water. Here from 24 inches to 28 inches deep is sufficient, but on more open ground, where springs from beneath give the excess of water, from 30 inches to 36 inches is not too deep. It is surface water mostly that soddens the ground on clayey soils.—("Rural World.")

LET THE HARNESS FIT.—All those who have horses under their care should in our changeable climate—indeed, at all times—see that the harness fits the animal to which it is applied. It is necessary that the fit be a good one at all times, but in cold weather the hide of the horse will put up with a good deal of chafing without becoming sore, whereas in hot weather it frays very easily. Then in changeable temperature the sweat dries, the salty exudations become dry and encrusted on the edges of the galls produced, and sores that are obstinate enough about healing are the result. Collars and saddles get very wet with sweat, and if both they and the skin on which they rest are not properly attended to trouble quickly ensues. Crupper galls are not uncommon, and a throat latch that does not fit well often makes a nasty sore. It is so very easy to make harness fit well, down to the least important strap, that there is no excuse for any part of the gear chafing the horse. When one sees a horse's shoulders all raw, one may make up his mind that the groom in charge is a slovenly fellow that merits his discharge richly, and so with all harness galls. Owing to faulty formation sometimes it is very hard to keep a horse's shoulders from getting galled. In this case the only thing to be done is to have a maker construct a collar of special pattern.—("Rural World.")

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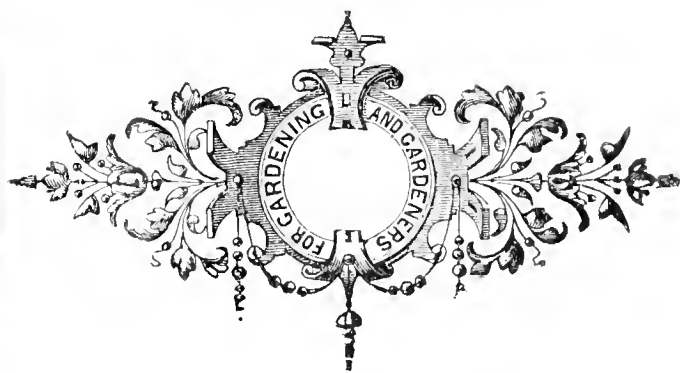
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Journal of Horticulture.

THURSDAY, FEBRUARY 8, 1900.

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CUTTINGS.

WHAT was lately advanced concerning seedlings and the advantage derived by the plant in a mature stage of growth from its treatment in infancy, applies with equal force to plants propagated by other methods. It is a sound rule which says that a plant, by whatever method it is propagated, should be grown without check in its earlier stages. Gardening is, of course, largely made up of compromises, and it is not possible to carry every rule to its legitimate conclusion.

One might allude in this connection to Zonal Pelargoniums rooted in autumn and preserved in a quiescent state until spring, or to Chrysanthemums rooted in winter and then transferred to cold frames where the environments are necessarily not stimulating to vegetation. But in the latter case it must be remembered that the Chrysanthemum is practically hardy, and though little growth may be made in January or in February there is no reason why the progress should not be of a satisfactory nature. With the Pelargoniums it is different, and as a matter of fact the check to growth is of so pronounced a nature that I have discontinued propagating these in autumn for blooming the year succeeding, finding as I do that better plants are produced from spring-rooted cuttings which are permitted to experience no check to growth. At the same time, autumn propagation will in not a few cases be the only method possible.

Attention to this matter is under the present day system of high pressure of more importance than formerly. We now must have plants, the greater number of not more than annual duration, Crotons, Carnations, Pelargoniums, Marguerites, Solanums, and such like, and any loss of time in their production means dissatisfaction at least. It is an indisputable fact that loss occurs not during summer or autumn, but while the plants are yet small. Apart altogether from check to growth, which I am afraid can never be quite overcome, if plants either as rooted cuttings or in a more advanced stage are permitted to stand unpotted for a week or two after reaching a proper condition for this operation the loss is irremediable.

There are two methods of insuring against this waste—the former being to repot young stock rapidly till the proper size of pot has been reached, or to place into the final size at once. For not a few rapid-growing plants—*e.g.*, Marguerites, Salvias, and Eupatoriums—it is indeed the preferable method to place well rooted cuttings directly into the flowering size; the only risk is in over-watering during the earlier weeks of the plant's life in the pot. That avoided, the results are certain to be equal, and probably better, than by the frequent repotting system, because there is no check to growth when once the little plant recovers from its one move. The practice in producing large plants, to be most successful, must also be carried out on these lines. The handiest Fuchsias, Ferns, and many other plants are produced by a continuous growth. An old friend of my own, at a period when Malmaison Carnations were hardly known, used to annually bloom a few large plants in every way perfect, and the method he pursued was to grow them without check, at the same time permitting no flower to appear till the desired dimensions had been obtained in the plants. A gardener at Clapham, about a quarter of a century ago, produced huge Crotons in a comparatively short time. If my recollection is not at fault, plants he showed me, 6 or 7 feet high, were grown in twenty months from cuttings, and his secret was unchecked growth.

One may admit all this to be true, and yet be in a position that renders it impossible to take opportunity by the forelock. But even then something may be done that, if not so satisfactory as the necessary work at the proper moment, is at least helpful in lessening the mischief. I refer to aiding young plants by means of manure, and preferably with manure of a chemical nature. There need be no hesitation in applying slight periodical dressings to young plants that have to remain in small pots beyond the time they ought to be removed. It does not stop the check to growth, but it hinders it from becoming disastrous, and preserves foliage and roots in an abnormally healthy condition, and capable of taking advantage of the delayed transference whenever it is provided.—B.

REMINISCENCES OF AN OLD FLORIST.—No. 4.

ONE of my earliest reminiscences of nursery gardens was that of Mr. Charles Turner of Slough. I paid him a visit some few years before I came to reside in England. He was then in a small place called Chalvey, near Slough; and had only a few frames in which he cultivated Pansies and Pinks. He was the same genial companion he always remained, being the very prince of florists, so that one need not at all wonder at his onward progress, and at the splendid and unique establishment which he formed at Slough. Nothing in the way of florists' flowers came amiss to him, though he did not confine himself to these. Nobody, I think, ever grew Carnations and Picotees as he did, while for years his collection of Auriculas was the only one near the metropolis worthy of the name. In his time, too, he had a splendid collection of florist's Tulips, and his beds of these were a sight worth going to see. There were many collections at that time of this grand flower in the neighbourhood of London, and amongst them may be mentioned that of Mr. Groom of Walworth. There were many bulbs in his catalogue which were priced from £20 to £50 each. I believe Mr. Turner was induced to take up their culture, as well as that of the Auricula, by his friend, Mr. John Edwards, and the culture of the Tulip was carried out by him enthusiastically for many years. At last, however, he was forced to give them up. "It would pay me better," he has often said to me, "to grow Lettuces." The same falling off of the taste for the Tulip has continued for many years, and now there are no collections I think about London.

But Mr. Turner's attention was not merely confined to florist flowers. Whatever he took in hand he did well and succeeded with. Many will remember the magnificent plants of *Azalea indica* which he used to exhibit at the metropolitan shows at the Crystal Palace and Botanic Gardens, as well as the grand pot Roses. The taste for these monsters has gone out, but they were marvels of cultural skill. The same may be said of his Pelargoniums, both Show and Fancy.

The plants were 3 and 4 feet through, and every single bloom was in the highest state of perfection. I need hardly say that it required the utmost cultural skill to produce these effects. In the Fancy Pelargonium, the more difficult of the two to grow, he was an adept, and he and Mr. Bailey of Shardloes were rivals between whom it was most difficult to adjudicate.

Year after year he used to put into commerce the new varieties raised by Mr. Garth of Farnham and Mr. Foster of Clewer Manor, and what a furore they created. I have seen a string of carriages waiting at Catleugh's shop at Hans Street, Chelsea, and ladies of title waiting for their plants for some of which they had paid £5 5s. apiece. I remember the bringing out of Garth's Joan of Arc, which it was considered at the time could never be surpassed. It was brilliant in colour, but deficient in shape, and in a few years went out of cultivation. Many years after this I paid a visit to Mr. Hoyle of Reading, and he showed me a very interesting series of blooms of flowers of his own raising, illustrating the immense strides which from time to time had been made, until at last such perfection of outline, such brilliancy of colour and softness of tints had been arrived at, that no perceptible change could be seen in the flowers of successive years, and so they had to take a back seat. I have always deplored this, for I do not think there was a more beautiful and refined class of flowers than these Pelargoniums.

Amongst the accomplishments of Mr. Turner was his taste in arrangement. I have seen him coming in front of a stage of "Geraniums" which his men had put up, shake his head at their arrangement, and in a few minutes he would so alter them that the collection looked 50 per cent. better. So I have also seen him look at a box of cut Roses belonging to someone else and say, "What a duffer that man is; I should like to have five minutes at that box." I have no doubt that if he had had he would have altered it completely.

There were two friends of Charles Turner whom I used often to meet at his house, John Spencer, of Bowood, and John Standish, of Bagshot, of the latter of these I shall have more to say by-and-by. The former was gardener and steward to the Marquis of Lansdowne, and best known to the horticultural world as a successful grower of Grapes; he was the raiser of Bowood Muscat, a double plate figure of which was given in the "Florist." It was a seedling from that best of all white Grapes, Muscat of Alexandria, which it closely resembles, but Dr. Hogg in his "Fruit Manual," states that it sets better and is more prolific. One thing connected with Charles Turner many will recollect, his splendid tenor voice, which many used to say equalled that of Sims Reeves. It is pleasant to find the old establishment carried on by his sons, and not, as in so many cases, passing into the hands of others. For many years Mr. Turner was a most successful grower of Dahlias, and he and John Keynes, of Salisbury, used to run one another very closely, not only in the exhibition of varieties, but also in the production of seedlings. When Roses came so much in vogue he was also a successful exhibitor in them, though he did not obtain the high position in them that he did in the former flower. But whatever place he occupied he was never found storming about defeat or exulting over success, and other exhibitors were always glad to find him competing with them. He has passed away, and the place that knew him knows him no more, but his name remains connected with many good flowers in the various sections in which he used to exhibit.—D., Deal.

HAMAMELIS ARBOREA.

THIS is undoubtedly the best of the Witch Hazels, and should be grown by everyone who has space for it, as it makes a warm patch of colour outdoors when flowers in the open are very scarce. It forms a tall shrub or small tree about 12 or 15 feet high, with many large, rather flat branches, which are covered in January and February with the peculiarly shaped yellow flowers.

It will thrive in any fairly good rather light soil, and is not particular as to situation, provided it is not too shaded; but it should, being a deciduous plant, and consequently leafless when in flower, be planted against a good background of evergreens, which will serve to throw its bright flowers into strong relief against their darker foliage. The flowers are borne on short spurs, in clusters of two or three, and consist of four strap-shaped, crinkled, deep yellow petals, each a little over half an inch in length, which are inserted in a small claret-coloured calyx, consisting of four reflexed sepals.

It is a first-rate plant for a large bed, where six or eight together will make a grand display in the winter, and if the surface of the bed is planted with Snowdrops or Chionodoxas the effect is much enhanced. It is a native of Japan. A good companion to the above is *H. japonica-zuccariniana*, also of Japanese origin, and having flowers of a pale lemon-yellow or straw colour. It thrives under the same conditions, grows about the same size, and flowers at the same time.—C.



ODONTOGLOSSUM CRISPUM FRANZ MAZAREEL.

"YOUNG Orchid Grower" asks if we can say when and by whom *Odontoglossum crispum* Franz Mazareel was shown before the Royal Horticultural Society. The date of exhibition was November 13th, 1894, and the exhibitors were Messrs. Vervae & Co., Mont St. Amand, Ghent. The variety was described in the *Journal of Horticulture* at the time as "having flowers of the ordinary size, but noteworthy for the wonderful colouring." The sepals and petals are white covered with red blotches, the lip being lemon yellow. It is one of the best varieties of this popular Orchid we have seen, and worthy of the first class certificate awarded for it." The illustration (fig. 26) will also be of interest to our correspondent.

ARRANGING ORCHIDS.

PERSONS interested in Orchid culture, and who have frequent opportunities for inspecting some of the finest collections in the country, must often have been struck by the fact that little or no effort is made to utilise the abundant material so as to create beautiful displays. One finds in the majority of places that the *Odontoglossums*, the *Cattleyas*, and so on are almost invariably kept in their respective structures, and beautiful as some of these undoubtedly are, a combination would be infinitely more so. The reason for this practice is not far to seek. Those who cultivate Orchids are largely specialists, and many of them have a rooted objection to heterogeneous mixtures, preferring to retain the several kinds *en masse*. If the matter be probed still further it will probably be to learn that the temperature that suits one kind does not suit another, and that the plan of making a real show house is not feasible, as the plants would inevitably suffer.

To a degree this may be so, but that it is an insurmountable objection is by no means so obvious. I have in my travels found one or two Orchid establishments where the system of maintaining, as far as possible, at least one structure in a constant state of beauty with miscellaneous kinds, and I have never learnt that the plants have suffered from the practice. That there is danger will be admitted by everyone, but the same may be said of our conservatories, which have, whether suitable or not, to accommodate all kinds of plants. As in the latter case so in the former. It merely resolves itself into a question of attention, and certainly no one would suppose that the enthusiastic Orchid grower would neglect his plants simply because their peerless beauties had been concentrated in one structure; rather the reverse, most people would say.

If the plants had to continue constantly in one house disaster to many and probably the whole of the occupants would soon follow. Such, however, is not the case. I would plead now for what might be termed an Orchid show-house, where each plant as it approached its most perfect beauty might find position, and whence it would be removed directly its charms began to wane. This would not necessitate a very long sojourn in an uncongenial temperature, and visitors who were not orchidists would have the pleasure of their inspection much increased by the practice. The enthusiast, as everyone knows, finds equal interest in the plants whether they are in flower or not, but the outsider, who has not been educated up to such a state, finds the steady progress through a dozen houses, each containing about a dozen flowers, the reverse of exhilarating. He sees little beauty in the pseudo-bulbs and leaves, though these may be in the best possible health.

To my mind it is not possible to make an equally beautiful display with any other plants as can be effected with Orchids, Ferns, and some small Palms. There are to be found in the *Cypripediums*, *Dendrobiums*, *Phalaenopsis*, *Cymbidiums*, *Odontoglossums*, *Lycastes*, *Cattleyas*, *Laelias*, *Oncidiums*, and the several others, types of such exquisitely delicate beauty as to entrance everyone who inspects them. And when a number of these is concentrated in one suitable place, and the soft greenery of Ferns and Palms skilfully utilised, the observer has such a feast as to send him away with a mind full of what has been seen, and which has made such an impression as is little likely to be effaced. I wish some of the Orchid loving readers of our Journal would give us the benefit of their ideas on this subject.

—TRAVELLER.

[As illustrative of a portion of our correspondent's text we give (fig. 30, page 119), a photographic illustration of a show house of Orchids, the beauty of which is certainly an argument in favour of the extension to the system "Traveller" advocates.]

THE WANDERINGS OF MR. PETER BARR, V.M.H.

NEW YORK being left behind, I made for Wyoming State to visit the wonderful Yellowstone Park. The tour of this is made by carriage, which takes travellers to all the interesting geysers. This park has been put aside as a reservation to preserve its natural beauty, the wonderful geysers, and the fauna. The buffalo which used to be so numerous all around that a drove of them took days to pass a certain point, have all been killed off, and a small herd in the park of some 100 yearly keep dwindling, as they are shot immediately they get out of the park. The hide and head now realise a considerable sum of money. A large body of soldiers are kept on police duty in the park summer and winter to guard the geysers and the wild animals. In an evening visitors who have a little nerve go out and watch the bears looking after the refuse from the hotels where the visitors put up in making the round of the park.

After the park, I made for Salt Lake City, and called on Bishop Romney, who has four wives. He got out his carriage with one of his wives, and drove me all about the town. I spent one day with Mrs. Emmeline Blanche Wells, who had been the sixth wife of Mr. Wells, one of Brigham Young's principal advisers.

After Salt Lake City I went through Leadville, Glenwood Springs, Colorado Spring, and other places, to Kansas City. I visited St. Louis, and at Shaw's Botanic Garden (Missouri Botanic Garden) I found Mr. James Gurney, the head gardener, who claims to have first flowered the



FIG. 26.—ODONTOGLOSSUM CRISPUM FRANZ MAZAREEL.

Victoria Regia at Regent's Park Botanic Gardens. Mr. Trelease, a Cornishman, I think, is the Botanical Professor. Here is the finest pre-Linnean library in America (Boston, Mass., has the finest horticultural library in America, perhaps the world), and it is not unlikely St. Louis has the finest pre-Linnean library outside the British Museum.

At Indianapolis, when sauntering up North Meridian Street admiring the fine homes and the well-grown trees, wondering what their age was (fifty years old I found afterwards), and wondering how long it would take them to die, as the City Board of Works had laid a fine cement street and cement footpath, and left no provision for water getting at the roots, I was startled by a girl's voice at my side. "Are you Mr. Peter Barr of London?" Mechanically I answered, "Yes." Then she said, "My mother wants to see you." So I turned into one of the finest homes in the fine avenue, and the lady was waiting to give me a welcome. I had never seen her and she had never seen me; but two years before I had met her husband in Copenhagen. She said, "He has gone to see the young Queen of Holland crowned, and I want to do in his absence what would have been done had he been here. You will dine with us to-night?" I had to pause and ask, "But how came you to recognise me?" This was answered by, "Oh, we have your photo, and knowing you would visit America and seeing you coming up the street as I was sitting in the verandah, I said, 'There is Peter Barr!' and I sent Elizabeth after you." I accepted the invitation. After dinner the horses were put in the carriage, and drove to the railway station, and then Mrs. Pierce asked me what baggage I had, and a porter was called, the traps were collected and put in the carriage, then to the hotel, got my hand-bag, after this to the newspaper offices, and I was duly heralded as a visitor at the house of Mrs. Elizabeth Pierce. Here I was detained some eight days. First the parkman was sent for, and he drove me two days about the parks in process of making and the finished parks. After this came the newspaper men to know what I thought of Indianapolis, its streets and parks. I condemned the felling of the trees in the streets, told them of the fine possibilities of their parks, and advised that the parkman

should have a free hand, and so on. Then in Mrs. Pierce's carriage I drove about to see the industries, also into the country to see what was to be seen, and had introductions to all and sundry.

After this happy experience I spent some days in Chicago under the care of Mr. Michael Barker of the "American Florist," Mr. Grand of the "Florists' Review," Mr. Vaughan the great Western seedsman, and of course the parks had all to be gone over with one of the engineers—Mr. Edgar Sanders, a well-known figure in Chicago. He brought me some literature touching Barr, the nurseryman of Balls Pond, the first man, or his partner, to send a collector to China to bring home the Chrysanthemums; he told me how he failed and came and settled in Chicago, first as a farmer and then as a nurseryman. Visited Graceland Cemetery, where you can plant a tree to mark your freehold or put a border or an ornamental building that will fall in with landscape effect, but no headstones or other disfigurement. Chicago, when the parks system is finished, I suppose, will boast of the finest town parks in the world. I made some suggestions condemning the floral elephants, monkeys, and other monstrosities. All was to be reformed as the public taste could be led from the vulgar to the sublime.

Milwaukee was my next place. Here Mr. Currie, the seedsman, got the wheels of his buggy greased, and I was hurled about the parks. I had hardly settled myself when a lady reporter called to ask my opinion of the parks. I said they were all too small, but well laid out originally, but some evil genius was at work spoiling the whole affair. This was nuts and honey to the lady. I gave her a few points, such as red Alternanthera in wavy lines in the grass, and asked her if a lady would adorn herself so, adding the same effect could be produced with pickled cabbage. Next morning a stinging article appeared, and the following night she came for more copy, and I condemned the filling up of the ravines and the great terra cotta pillars to bridges which should have been quiet and unobtrusive. The following day came a hot note from the Chairman of Parks to justify his work; but it was his death blow. The City of Milwaukee was tired of the man; he had usurped all the power and did as he pleased, so the next Mayor shelved him.

At Cincinnati I was met at the station by Dr. Holmes and his wife, and dined with the parkman and the cemetery superintendent, both fine men. The cemetery is charming, although too full of obelisks, but the trees save the bad effect. The parks are not rich, but great things are in contemplation. There is at present great competition with the towns of the U.S.A. for parks, large and small, to meet all classes and grades of society.

NOTES ON ALPINE FLOWERS.

SEMPERVIVUM ARACHNOIDEUM.

A CONSIDERABLE time ago the writer took occasion to speak in favour of the Houseleek known in gardens as *S. Laggeri*, but which botanists now rank as a variety of *Sempervivum arachnoideum*. The latter, which I suppose we must take as the type, is in its own way quite as pretty as the larger variety *Laggeri*. The cobweb-like tomentum, which makes the larger variety so attractive, is as well marked in the type, and when a number of rosettes have formed themselves into a dense mass they are effective indeed, especially in dry weather, when the "cobweb" shows up quite silk-like. The best place to grow the Cobweb Houseleek is on the side of a wall, or in crevices of rockwork so planted that it is in a vertical position. Grown thus the rain does not lie in the rosettes, and the danger of decay from excessive moisture is warded off. It is perfectly hardy as regards frost, but wet in winter is not only injurious to it at that season, but lessens its beauty in summer. The flowers, which come in June or July, are in a cluster at the top of a long, thick, fleshy stem clothed with thick leaves. When the rosette flowers it dies, so that I always advise those who can only secure a single rosette at first to take one which does not show any sign of flowering. *S. arachnoideum* likes a soil composed of sandy peat, but I always add some old mortar or broken limestone to the compost, together with a little thoroughly decayed cow manure.

LINARIA ORIGANIFOLIA.

While the Marjoram-leaved Toad Flax is generally ranked as a perennial, the writer has found that it cannot be depended on to survive every winter, and that it is generally safer to treat it as a biennial, and to raise it from seeds, or to propagate a reserve stock from cuttings. It comes from the South of Europe, so that this precaution is not unreasonable, although some gardens are so situated that the owners consider it quite hardy. It is not improbable that it is kept up by self-sown seedlings in these gardens, as is the case in that of the writer. It grows from 6 to 10 inches in height, and produces a number of small, bluish flowers with a yellow throat. These bloom over several months, generally coming into flower in June, and continuing until September. It likes a loamy soil with the addition of a little peat.

LINNEA BOREALIS.

Any plant which has been selected to bear the name of the great botanist to whom science owes so much deserves our notice. That the *Linnaea* received its name with the sanction of Linnaeus himself, and was chosen to be typical of his early career, ought to make this little plant doubly precious, most of those acquainted with the life of the

botanist will agree. Linnaeus himself spoke of it as—"an humble, despised, and neglected Lapland plant, flowering at an early age, like the person whose name it bears." Its generic name is, however, far from being its only recommendation, for it is one of the neatest and most charming of the dwarfed beauties which are so dear to every admirer of alpine plants. Its attractive small leaves and its twin pinkish blossoms depending gracefully from the stalks make it much admired. It is widely spread over the northern regions. It is often far from successful in rock gardens, but is not difficult to grow if its wants are studied. It likes a rather shady place in a well-drained but moist nook in the rockery, where it has sufficient space to spread by means of its creeping branches. One would hardly think from its general appearance that the *Linnaea* is related to the Honeysuckle and other plants of the same order; yet this is the case. Division is the only method of increasing it with which I am acquainted.

SEDUM REFLEXUM.

Some readers will possibly find fault with me for writing in these notes about a plant which the advanced grower of alpine plants is disposed to despise. But this Stonecrop has its uses on large rockwork or in carpeting the ground where some of the rockery shrubs are planted. It is always fresh with its trails of pointed leaves, and its yellow flowers, though rather coarse, make a bright feature even in the luxuriance of the feast of June and July flowers. It practically requires no cultivation, except, it may be, in restraining its tendency to spread too rapidly. Even a single branch stuck in the ground is almost certain to grow. It is of evergreen habit—ALPINUS.

JUSTICIA FLAVICOMA.

I WAS induced to take up the cultivation of this plant with the hope of making it useful during the months of September and October, but in this I have so far failed. I thought that it could be so managed as in the case of *Justicia carnea*; it appears, however, to be predisposed to flowering at this season instead. It is an easy plant to grow in an ordinary stove, and may be treated in a similar manner to the *Poinsettia* by rooting a fresh stock every spring. It propagates readily from the shoots as ordinary cuttings or from eyes. Large pots are not necessary—nothing beyond a 6-inch pot is in any sense desirable. Dwarf plants may be had by an occasional pinching, and thus treated it would not be a difficult matter to have plants from 12 to 18 inches high with a dozen or more spikes upon them. For this season in association with *Eranthemum pulchellum*, with its deep blue flowers, it is an admirable plant. In "Nicholson's Dictionary of Gardening" it will be found under *Schaneria flavicoma*.—JAS. HUDSON, *Gunnorsbury House, Acton*.

Justicia flavicoma (fig. 27) is known also as *J. calytricha*, but according to the "Index Kewensis" the correct name is *Schaneria calycotricha*. The examples exhibited by Mr. Hudson at the meeting of the Royal Horticultural Society held in the Drill Hall on January 23rd were greatly admired by those present. It is one of the most useful yellow flowering plants in cultivation for purposes of decoration during the winter and spring. If pushed forward in the autumn in a temperature of 60° it can be had in bloom early in January, and will continue flowering until May in any structure where the temperature does not fall below 45°. The plants should not be thrown away after the first flowers fade, for they quickly come into flower again, and are more beautiful than is the case at first. Those who have not the temperature named may grow the plant successfully if they can command a night temperature of 45° to 50° during the winter.

Plants for decoration in 5 and 6-inch pots should be raised from cuttings annually. These are quickly produced if a few plants are pushed forward in brisk heat after flowering. The cuttings formed of young growths root freely in sandy soil, either singly in small pots, or a number may be placed together, well watered, and then covered with a bell-glass, hand-light, or be placed in a propagating frame. If inserted together they must be potted singly directly they are rooted. As soon as they are established in 3-inch pots the points of the plants may be removed to induce them to branch. The plants are not pinched more than twice, and are placed in their largest pots as soon as a good number of roots has been made.

When well established they may be grown in cold frames through the summer months, closing the frame early in the afternoon. By the middle of September the plants will be dwarf and sturdy, not more than 1 foot high, and should be given a light position in some structure where the temperature named can be maintained. These plants do well in a compost of fibrous loam three parts, the other part being composed of leaf mould and manure, about one-seventh of the latter with the addition of a liberal quantity of sand.

PRUNING.

UNQUESTIONABLY many fruit trees have been greatly benefited by the pruning to which they have been subjected during winter; but, on the other hand, others have about as certainly been rendered less fruitful by the free and ill-considered application of the knife to their branches. Pruning must be conducted in accordance not only with the habits of the trees, but also in accordance with the nature of the soil in which they are growing. It has been said that if summer-pruning is intelligently performed that little remains to be done in winter, which is true; and it is equally true that the pruning of trees in summer

'opening out of their centres' is seldom satisfactory. The time for benefiting the trees by exposing the branches in their interior has passed if the pruning has been deferred until long after those branches have become leafless and spurless. Such wood cannot be made productive, and the only result of such pruning is a mass of young sappy shoots growing where the sun cannot shine on their leaves or the air circulate freely to render the wood fruitful.

THINNING THE BRANCHES.

As a rule, standard and bush fruit trees which have been permitted to grow in a natural and semi-wild state had better remain so, and



FIG. 27.—JUSTICIA FLAVICOMA.

is more effectual in the production of fruit than cutting them severely in winter. Yet although this has been demonstrated over and over again and the fact became public property many years ago, there remains still a considerable amount of pruning to be done during the winter months.

NEGLECTED TREES.

Not infrequently we find that trees have been neglected for one or more years, and usually the longer they have been neglected the more severe is the pruning to which they are subjected, as if to compensate for past neglect. That is a common practice, and it may be added a common mistake. The extreme mutilation of trees during the winter is not promotive of fruitfulness. If the trees have been long neglected, be they Apple trees or Gooseberry bushes, the sudden and violent

continue bearing on the extremities of their branches until superior fruit can be obtained from young and better managed trees. If any pruning is done to such trees it should be limited to a moderate thinning-out of the branches, severing them as close as possible to the main stems; for if the branches are simply shortened the growth in two years will be more crowded than ever, and the result will be more leaves but less fruit than before. The excessive pruning to which young trees are often subjected has been frequently alluded to, and evidence adduced to show that a more natural system of growth possesses advantages where large crops of fruit are the main object in view. By rigid summer-pinching and root-pruning a tree can be brought into a bearing state and be made to form a mass of fruit spurs before it has attained a height of 3 feet. But of what real use is that tree? In certain

positions such trees are ornamental, but the most that can be said about them is that they are cultivated toys—gardeners' and amateurs' playthings. For practical usefulness, and for yielding a substantial supply of fruit, they are of small value in comparison with trees that have not been crippled by the "skill" of man. Trees managed on the violent restrictive principle alluded to are at ten years of age of no greater value than they were when at five or six years old, and at twenty years old what are they? Answer, Dead or dying. If owners of gardens desire to have the Japanese style carried out because of a certain amount of pleasure it gives, they have of course a perfect right to that form of gratification; but do not let the system be mis-called a "profitable mode of fruit culture," because hundreds of gardeners know that it is not profitable.

SYMMETRY *versus* FRUIT.

Another plan of managing dwarf trees that is perhaps more common than that above noticed is only a few degrees less profitable. It is somewhat as follows:—Dwarf trees are purchased that are intended to be grown on the summer-pinching principle, but not on the root-pruning system. They are intended to be moderately dwarf and healthy, not extremely dwarf and unhealthy. The idea is good, but is not always carried out properly. So far as the roots are concerned the prescribed rule of culture is adhered to, for they are left unchecked, but the summer-pinching is not thorough or persistently conducted. For the first year or two, when the trees are new and small, they are "gone over" with tolerable regularity, but as they grow larger the novelty of the system wears off, and other work presses so hard that the necessary pinching is not, indeed cannot, be done, and nearly all the pruning is left until winter. The trees are then pruned severely, and properly so far as their shape is concerned. The branches are disposed regularly and thickly, and after the work has been done the trees have a professional business-like look. A "lot of stuff" has been taken out and preserved for flower stakes, and the work is viewed with a complacent half hopeful, yet half doubtful, feeling, that finds expression in a subdued observation that "they ought to do something." And they will do something—they will grow another fine crop of flower stakes.

GROWING FLOWER STAKES.

If the soil is good, and the roots are unchecked, young fruit trees that receive little or no summer-pinching form long and strong growths, each shoot being from 2 to 4 feet long. With the object of imparting to the trees an agreeable shape, which in itself is commendable, and also with the object of forming fruit spurs, which is again commendable, the breastwood is cut closely in, and the extremities are very much shortened. The object is good, but the mode of attaining it is erroneous. A tree thus operated upon cannot form spurs. The "art" of the pruner and cultivator renders that impossible. The system is in its nature fatal to the formation of fruit buds. They cannot form, for neither time is afforded nor material provided for the accomplishment of this desirable object. In cutting out the flower stakes the fruit-bud-forming material is removed, and time is lost in the trees attempting to provide another supply for that purpose by another season's growth. It is man warring against Nature, and both are losers. Having, as a plain man, laid down the law in a plain way, I can fancy some such question as the following being asked, with an air of doubt, if not of something more, "Do you mean to say that the long shoots ought not to be removed, and that if they remain they will form fruit spurs?" I have not framed that question so that it is easy to answer, nor in a form that I would prefer; but have put it as a natural question, even if difficult to reply to categorically.

NATURAL SPURS.

I will answer the latter part of the question first, by saying that if the long shoots are permitted to remain they will form fruit spurs, provided—and this is an all-important condition—that they are so thinly dispersed that the sun and air can act on every leaf. Natural spurs will then form the whole length of the shoots. It will take two years, or it may be three, for the fruit buds to thus form; but form on Apples, Pears, Plums, and Cherries they will, and after that there will be little trouble given by breastwood. The flower-stake-growing period will have passed, and the blossoming and (weather permitting) fruit-bearing era will have arrived. If man will just aid Nature by thinning-out superfluous shoots, and prevent others forming in their places, the branches left will become clothed with fruit spurs; but if he fights her by cutting off in winter nine-tenths of the growth formed in summer (which is often the case) he will have to wait a long time for fruit. To the former part of the question, as to whether the shoots ought to remain, the answer is, "No. It is by man's error that the thicket is produced, and the error must be repaired to give Nature a chance to do her work." The lost balance between root and branch must be restored. Such growths that impede the ingress of air to the tree and obstruct the action of light on the foliage must be removed, and further obstruction must also be arrested at its source—the roots. The roots must be partially checked, or the tree must be wholly dug up and replanted according to its size and vigour, and fruitfulness will ensue.

THE BALANCE OF ROOT AND BRANCH.

Trees which have received little or no pruning since they left the nursery grow naturally thinly, but not always symmetrically, and in

time become studded with natural spurs and laden with fruit. Where quantity of fruit is of greater moment than the shape of a tree it will be well to only prune the tree very slightly after it is five years old, but merely thin out branches that are likely to cross each other or cause overcrowding. If a symmetrical tree is of importance then it must be pruned accordingly, but the roots must have attention as well as the branches, or fruit will be sparse. As many examples prove, trees both handsome in shape and fruitful in nature may be produced by an intelligent system of manipulation, but this can only be accomplished by preventing the power of the roots overbalancing that of the branches, while at the same time root action is sufficient to sustain the tree in a healthy state. The extremes of severe restriction on the one hand and natural wildness on the other have been pointed out, and it is for the cultivator to adopt the mean that will best meet his requirements, but if fruit is the main object let him put much trust in Nature.—FRUIT GROWER

IRISH NOTES.

THE weather during the past week has been very unpleasant; the early days were fine, but towards the end we have had snowstorms at frequent intervals. The schedule for the guidance of exhibitors at the meetings of the Royal Horticultural Society of Ireland has been issued. The lists of prizes are similar to previous years, with the exception of a silver challenge cup, value ten sovereigns, which has been presented by Messrs. West & Son, College Green, Dublin, which will be given for a stand of eighteen blooms of Roses, comprising Teas and Noisettes. The dates are: The spring show, Wednesday, April 11th, at the Royal University Buildings, Earlsfort Terrace; the summer show, Thursday, July 5th, at Merrion Square; the autumn show, Tuesday, August 28th, at the same place; and the winter show, Tuesday and Wednesday, November 6th and 7th, at the Royal Dublin Society's Buildings, Ball's Bridge. Any further information can be obtained by writing to the Secretary, Mr. W. H. Hillyard, 61, Dawson Street, Dublin.

NOT A MINIATURE ROCKERY.

To those persons who admire the form and outline of rocks jutting out, or laid on a sward with some choice Alpines, shrubs, or towering trees to harmonise the whole, the natural rockery attached to the gardens of G. Orr Wilson, Esq., at Dunardagh, Blackrock, Dublin, would have attractions untold. This extensive rockery covers an area of close on two acres, and is one mass of rocks piled one upon another, wherein tortuous paths have been made, and disclose many an attractive picture when viewed from the gardens adjoining the residence. Mr. Hardy, the gardener, has only just finished those winding paths and formed several beds, but these simply await the beneficent touch of spring to transform them into life and beauty. Owing to the immense area to be covered, it will take this experienced and thoughtful gardener some time ere the rockery will be quite complete.

A USEFUL FERN WALL.

On the occasion of a recent visit to the gardens of Talbot Power, Esq., Leopardstown Park, Stillorgan, my attention was drawn to a wall on which Maidenhair Ferns in variety were growing. It formed a veritable sheet of Fern, and the advantages accruing from this mode of culture are evident, as it places at the disposal of the gardener, Mr. J. Sweeny, a practically unlimited supply of the indispensable fronds, and at the same time leaves valuable stage space free for other plants. The arrangement consists of grooved tiles running parallel from the bottom upwards, and the space available in the grooves is quite broad enough to cultivate a good sized plant. In the same house some noble specimens of that handsome stove foliage plant *Anthurium crystallinum* were to be seen. The large dull green leaves and the prominent silver veins look exceedingly well; the specimens are placed at intervals, between which various plants are fittingly disposed.—A. O'NEILL.

CRINUM AUGUSTUM.—The genus *Crinum* is productive of a very large number of handsome flowering species, many of which are highly thought of by the horticulturist for the decoration of stove or greenhouse. That under notice is one of the showiest of the genus, and deserves universal attention. It is a native of Mauritius and the Seychelle Islands, and requires a stove temperature. By reason of its foliage alone it is a striking plant, the leaves often being from 3½ to 4 feet long and 5 inches wide, occasionally exceeding those dimensions. The flowers are produced in large spreading umbels, on scapes 3 feet high, from fifteen to twenty blossoms being often contained in each head. Individually they are large and showy. The corolla tube is from 5 to 6 inches long. The perianth segments are long and spreading, making the open flowers often 7 inches across. With the exception of the inner side of the segments and the anthers the whole flower and upper part of the scape is of a deep red colour. The anthers are bright yellow, while the other excepted portion has a white ground deeply stained with red. The plant is of easy cultivation, provided it has good loamy well-drained soil, with abundance of heat and moisture during its growing season, and a three-months rest in winter.—W. D.



Recent Weather in London.—Towards the end of last week we had a change in the weather, which brought on Friday night and Saturday morning a very heavy fall of snow. With a cessation of the fall a thaw set in, and continued gradually until Tuesday night. It was very slow, and accompanied by bitterly cold winds on almost every day. The sun shone for a brief period on Tuesday. There was a sharp frost on Wednesday morning, which continued to the moment of going to press.

Weather in the North.—February brought a change to more seasonable weather. There has been a succession of clear sunny days, with occasionally a slight overclouding and a light snow shower. Frost has been continuous since the 1st, 11° being registered on the 2nd and 13° on Monday, which day was bright and clear throughout, with every appearance of continued frost.—B. D., S. Perthshire.

Royal Horticultural Society.—The next meeting of the Royal Horticultural Society will take place in the Drill Hall, James Street, Westminster, on Tuesday, February 13th. The various Committees will assemble at noon as usual, and at three o'clock the annual general meeting of the Society will be held at the Society's offices, 117, Victoria Street, Westminster, S.W. The Council of the R.H.S. at its last meeting unanimously requested the President, Sir Trevor Lawrence, Bart., to allow himself to be appointed to the vacant Victoria Medal of Honour.

Cross-Fertilisation of Cereals.—On Monday afternoon a meeting of the members of the Farmers' Club was held at the Club, Salisbury Hotel, E.C., when Mr. Gaiton, the well-known authority on the cross-fertilisation of farm plants, gave an interesting address on scientific plant breeding. Mr. Gaiton said that it had been proved conclusively that there was no cross-fertilisation in Nature, but by artificial methods English farmers would be able to grow better crops. Experiments in breeding had been carried on on an extensive scale at Newton-le-Willows, and was largely assisted by the late Earl Winchelsea. The result of their researches had been offered to the Government in order to assist agriculture, but the only reply that had been received was to the effect that there was no department capable of developing the experiment, nor any funds to assist the movement.

Too Early Seed Sowing.—The time is rapidly approaching when the attention of growers will be turned to the sowing of both flower and vegetable seeds for transplanting later in the open. Many who are anxious to begin will do well to carefully consider the concluding paragraph of the article on page 44, referring to these operations. It may not be necessary to tell practical gardeners when to sow their flower seeds, but even they sometimes err on the side of too early sowing, and it is a too common practice to sow the seeds of Asters, Stocks, and other half-hardy annuals in strong heat in February, instead of waiting a few weeks longer, when the plants can go from the seedling to the flower stage without the check that is inevitable when they have to be kept in a confined root-bound condition, brought about in most cases by the grower's anxiety to get a little ahead of the season.—G.

Indian Gardening.—On more than one occasion it has been our pleasure to congratulate the Editor of this Indian periodical, and we cannot let pass a further opportunity. This arose with the new year, when the conductors added another distinct section of the paper, which will be devoted to Tea, Coffee, Indigo, and economic products generally. The departure has been to a large degree forced upon the Editor by correspondents seeking information, which could not adequately be given without encroaching on the space devoted to horticulture. Several pages have been added, and they are full of interesting matter. So far as the original section is concerned we again notice improvement in the paper, which now takes half tone blocks, and brings the details out admirably. We can only add, that if the new section is as sound and as interesting as the old, it must prove an unqualified success.

Death of Mr. Smith, Sen.—Mr. E. D. Smith writes from Carshalton:—"I have just lost my father, who came to live at Gravesend shortly before we left there, and managed a small place at Rosherville. He had an attack of paralysis, which necessitated his being in the hospital for three months. He died on January 26th, and was buried at Gravesend on Thursday last. He was seventy-three years of age." [We sympathise with our coadjutor in his great trouble.]

Native Guano.—The Secretary of the Native Guano Company, Ltd., 29, New Bridge Street, Blackfriars, has favoured us with a 56-page pamphlet of testimonials. These number some hundreds, and have come from all parts of England and Wales, and must of necessity represent many kinds of soils and crops. All, however, testify to the excellence of this plant food, which has attained to very great popularity since it has been before the public.

Southern Counties' Carnation Society.—The second annual report of this Society shows a condition of affairs that must be gratifying to all concerned. Indeed, in the Committee's official report we find the following sentence, which conveys an excellent idea of how matters stand. "Without invidious comparison, your Committee cannot but feel great satisfaction, that, in the second year of its existence only, it is second to none in the provinces, and they accept this as a mark of approval of the lines upon which the Society is carried out." The schedule of the show for this year is also provided, and comprises many classes with capital prizes. There are in addition to those items some articles on Carnations by experts. The Honorary Secretary is Mr. W. Garton, jun., York Buildings, Southampton.

Isle of Wight.—On Thursday last a public meeting was held in the Newport Guildhall with the object of forming a local Chrysanthemum Society. Mr. W. Morris, an old exhibitor, presided over a small attendance. After an animated discussion it was resolved, on the motion of Mr. W. E. Wickens, that a Newport Chrysanthemum Society be established, and that an exhibition be held in November. A Committee was afterwards elected, with F. T. Mew, Esq., J.P., C.C., President, Dr. M. T. Coombes Treasurer, and Mr. C. H. Cave Secretary. On Saturday last the Isle of Wight Horticultural Improvement Association held its adjourned annual meeting at Warburton's Hotel, Newport. Dr. J. Groves presided over a good attendance. The members decided to elect local Committees at Cowes, Ryde, Shanklin, Ventnor, Freshwater, and Newport, with seven members each. It was decided to amalgamate with the Ryde Horticultural Society in the holding of an exhibition of spring flowers at Ryde Town Hall on April 19th. It was resolved a fruit and honey show be held at Newport in October next. It was also decided to award the Association certificates to meritorious exhibits staged at any of the Island shows during the year 1900. The programme of lectures for the current year was left in the hands of the Secretary, also the places of meeting. A sub-committee was appointed to make arrangements for printing in book form the lectures given at the meetings, with other useful information. The meeting was brought to a close by the election of seven new members.—S. H.

Chester Paxton Society.—The annual social gathering of this Society was held on Saturday at the Grosvenor Museum, when about 150 members met under the presidency of Mr. Robert Wakefield. Tea was served in the Art Gallery, after which an entertainment was given in the lecture theatre. The chief item of interest in this was an illustrated lecture on the Transvaal war, by Mr. J. D. Siddall. Mr. Siddall's lucid descriptions of the chief places of interest in South Africa, aided by an excellent set of lantern slides, enabled the audience to follow intelligently the principal events which have happened in the Transvaal during the past year. In addition to this a musical programme was well carried out by Mrs. Simon, Miss and the Masters Weighall, Mrs. and the Masters Miln, Mr. E. Ward, and Mr. T. Brook Edwards as accompanist. All of these acquitted themselves most creditably, as was very evident by the applause from the audience, and the rendering of "Soldiers of the Queen" and "Absent Minded Beggar" resulted in a good collection for the war fund. At the conclusion of this programme Mr. N. F. Barnes proposed, and Mr. John Wynne seconded, a hearty vote of thanks to all who had contributed to the evening's enjoyment. Mr. Siddall in responding said that it had given himself and the others great pleasure to entertain the members of the Paxton Society, and hoped that the Society would have many other similar gatherings in the Museum. On the initiative of Mr. Miln, the President was also thanked for his services, and the singing of the National Anthem brought a very enjoyable gathering to a close.

The Value of Birds.—A French naturalist asserts that if the world should become birdless man would not inhabit it after nine years' time, in spite of all the sprays and poisons that could be manufactured for the destruction of insects. The bugs and slugs would simply eat up all the orchards and crops in that time.

The Imperial Yeomanry.—Mr. Harcourt Webb and Mr. Frank Webb, sons of Colonel William G. Webb of Wordsley, Stourbridge, who, after holding commissions in the 1st South Staffordshire Volunteer Battalion, recently joined the Imperial Yeomanry, embarked for South Africa on Saturday. Their many friends in the Stourbridge district abound in good wishes for them, and in the hope for their safe and early return.

The Oldest Tree in the World.—The oldest tree in the world is reported to be an Oak, on the island of Cos, in Asia Minor, which, according to a painstaking German investigator, has attained the very respectable age of 2900 years. The authority has arrived at this conclusion from a careful examination on the ground. Tradition has it that the philosopher Hippocrates, who was born on the island, often assembled his pupils under the welcome shade of this very tree's branches. Now Hippocrates lived five centuries before the Christian era, and if this is the same old tree, it has indeed established a fine record for longevity. The trunk of this ancient Oak has a diameter of over 27 feet.

The Late Duke of Teck.—At a Committee meeting of the Richmond Horticultural Society, specially convened for the purpose, Mr. Thomas Skewes-Cox, M.P., in the chair, the following resolution was unanimously adopted: "That the Richmond Horticultural Society hereby places on record its deep regret at the loss which has befallen horticulture by the death of his Highness the Duke of Teck, G.C.B., a prince who for no less than twenty-six years past had been the President and valued friend and supporter of this Society, and begs to tender sincere and respectful sympathy to their Royal Highnesses the Duke and Duchess of York and the other members of the late President's family in their heavy bereavement."

Damage by the Snowstorm.—The heavy snowstorm we experienced last Friday night must surely have wrought great damage to shrubs and trees of various descriptions throughout the southern counties. In the grounds here numerous branches and the tops of several Rhododendrons, Arbutus, Cedars, and Pines were broken off during the night by the wet heavy masses of snow, which on the level lay to a depth of quite 6 inches. Tall Junipers and Cryptomerias were bent nearly double by their unaccustomed burden, whilst clumps of Gorse and Broom were flat on the ground. The snow is disappearing very slowly, which will benefit the ground more than a rapid thaw would do by sinking gradually into the soil, which in many places, more especially in clumps of shrubs, has not recovered from the terrible drought of the past two summers.—T. H. BOLTON, *Coombe End*.

The Snow.—There is a pretty notion prevalent that snowfalls are providential dispensations purposely intended to protect plants out in the open from hard frosts and biting winds. No doubt such results follow in the Arctic regions and in the countries of almost perpetual snow. But in Great Britain our snows are usually of a very prosaic order, and generally become an intolerable nuisance. Hills and dales covered with the white frozen vapour may be temporarily pretty and even picturesque, but the eye soon tires of the glittering whiteness of the scene, let it be ever so unwonted. But snowfalls in a town are horrors. What misery they cause to everyone. Not even poets of the order of an Austin or a Kipling could find in a town under snow anything to arouse the muse of rhyme, if not of song. We have just had for the South a heavy snowfall, varying in depth from 4 to 6 inches. It was a soft snow, and followed by great mildness, so that the frozen vapour began to disappear rapidly. But the plant protection theory had not a peg on which to hang an axiom or a sonnet. There was neither frost nor biting wind following. The plants might well have complained of the scare thus created. Why thus envelope them in snow? Why thus profess to furnish them shelter and protection when there was no wolf-like frost prowling about, no fierce beast howling for its prey? To gardeners unnecessary snow brings great inconvenience, but during such a winter as the present, for instance, its primary compensation is found in the quantity of moisture it imparts to the soil, and in a gradual way. Still the quantity of moisture thus furnished is relatively small, for 6 ins. of snow probably does not furnish when it is dissolved more than one-third of an inch of water.—A. D.

Pitcairnia corallina.—Bromeliads as a rule are a neglected race of plants. Some without doubt do not deserve a place in gardens, where room is limited, but there are others which are very showy, as evidenced by the display of species and hybrids exhibited at Chiswick in July last, on the occasion of the Hybridisation Conference. To the showy section the one under notice belongs, and by many people is said to be the finest of the whole set for decorative purposes. The plant is of ornamental character throughout. The leaves are from 4 to 5 feet long and 4 inches wide in the centre, narrowing to a long petiole at the base, and to a point at the apex. They are silvery in colour, and armed along the margins with a few thick spines. The flowers are about 1½ inch long, of an exceptionally bright coral red, and produced forty or fifty together on drooping racemes 18 inches long, the same colour as the flowers. A fine specimen, bearing several inflorescences, may be seen in flower in the Victoria Regia house at Kew, where at the present time it is by far the most conspicuous object.—K.

Sussex Weather.—The total rainfall at Abbot's Leigh, Haywards Heath, for the past month was 3.57 inches, being 1.44 inch above the average. The heaviest fall was 0.73 inch on the 6th. Rain fell on twenty-one days. The maximum temperature was 51° on the 2nd, 23rd, and 24th; the minimum 24° on the 14th. Mean maximum 44.24°, mean minimum 34.05°; mean temperature 39.14°, which is 2.08° below the average. A cold wet month, with frequent slight frosts. There was a considerable fall of very wet snow on the 27th and 28th.—R. I.

January Weather at Belvoir Castle.—The prevailing direction of the wind was S. on eighteen days. The total rainfall was 3.16 inches, which fell on twenty-five days, and is 1.38 inch above the average for the month. The greatest daily fall was 0.90 inch on the 6th. Barometer (corrected and reduced): Highest reading 30.469 inches on the 11th at 9 A.M.; lowest 29.330 inches on the 28th at 9 A.M. Thermometers: Highest in the shade 52° on the 23rd; lowest 25° on the 21st. Mean of daily maxima 43.19°; mean of daily minima 32.87°. Mean temperature of the month 38.03°; lowest on the grass 22° on the 1st and 2nd; highest in the sun 80° on the 27th. Mean temperature of the earth at 3 feet 39.03°. Total sunshine, twenty-four hours fifty minutes. There were sixteen sunless days.—W. H. DIVERS.

The Weather in Bedfordshire.—The 2nd inst. was heavily overcast all day, with a keen north-easterly wind; at night the wind abated and snow began to fall, continuing all night, and in the morning the depth was 7 inches, the heaviest fall at one time for some years. The night generally was still, and the flakes of snow were very fleecy, so that wherever they fell on trees, shrubs, and hedges it was nearly the same thickness as that on the ground, and consequently the weaker growing shrubs were prostrated, and the more brittle kinds, such as Aucubas, were in several cases broken. I learn that in the neighbourhood several fine Cedars of Lebanon have suffered. Fortunately the following day was calm, or much more damage would have resulted. The landscape is still covered with snow, although a slight thaw has continued since Saturday, but the temperature is very low, and garden work practically at a standstill.—G. R. ALLIS, *Old Warden, Biggleswade*.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
January and February.										
Sunday 28	N.N.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday 29	N.N.E.	33.9	32.8	37.9	31.5	0.21	39.1	42.5	44.4	23.1
Tuesday 30	N.N.E.	35.6	33.9	39.8	32.7	0.02	38.2	41.6	44.3	29.2
Wed'sday 31	N.N.E.	36.9	35.0	39.1	35.4	—	38.8	41.3	44.2	32.0
Thursday 1	E.N.E.	37.6	35.9	39.5	36.5	—	38.9	41.3	44.1	34.2
Friday .. 2	E.N.E.	34.7	32.3	36.0	33.0	—	38.9	41.2	44.0	27.2
Saturday 3	N.E.	35.1	34.7	36.9	33.0	0.65	37.5	41.1	43.9	30.3
		34.5	33.7	34.1	32.3	0.03	37.2	40.5	43.9	30.8
MEANS ..		35.5	34.0	37.6	33.5	Total 0.91	38.4	41.4	44.1	29.5

The weather during the week has been remarkable for cold north-easterly winds. Sleet and rain fell on Friday, followed in the evening by snow, to the depth of 3½ inches.

DECADENCE IN WALL TREES.

A WRITER to the general Press has been more than once heard to say that nothing was so depressing as to be taken no notice of; to be praised, he said, was gratifying, as it appealed to one's vanity; to be adversely criticised was useful, as it afforded a theme for another discourse; even to be abused a little was helpful, as it acted as a stimulant; but to be ignored was positively enervating. If I were to share those views I ought to be doubly thankful to Mr. Oldhead, who, on page 93, seems both to chide me and praise me for the communication on page 52, with which he curiously deals.

First he would seem to imply that wall trees are all right if you will but let them alone, or at least those that are in the hands of "gardeners," and not a slur must be cast on their vocation. On their "vocation" certainly not. Then my friendly critic affects not to understand what a "modern go-ahead gardener" is. Has he not read the *Journal of Horticulture* wherein the "modern" has declared himself as having no time to train the branches of fruit trees "straight as a gun barrel," as Mr. Temple advised on page 77? But all he tries to do is to rush them up the wall as fast as he can to get fruit. The shape of the trees and the regular disposition of the branches are nothing to him; he simply wants fruit, and wants it quickly. He obtains it quickly; but he does another thing, though that does not count for his purpose—he spoils the trees quickly, too.

Perhaps Mr. Oldhead is a comparatively new reader, and has not seen such narratives; but if he is not a very young gardener, and has had reasonable facilities for getting about, he may have come in contact with such men and such rapidly "trained" trees, which, for the creditable furnishing of walls in private gardens, are exactly what they ought not to be. The modern fashion is to adopt the market growers' plan with trees and Vines: run them up quickly, crop them early and heavily, exhaust them prematurely, then root them out with as little compunction as if they were Cabbage stumps, and plant more.

I should like to take another point in my friend's letter. I refer to him as "friend" for his being so good as to enable me to note and subject the point to the gentlest of analysis. After telling us in these columns of the "epidemic" of neglected wall trees, and even approving of my remarks as embodying an elementary lesson and deserved castigation to recalcitrants, he complacently tells us that the *Journal of Horticulture* is not the right place for me to point out such shortcomings. "As well," he intimates, "address my remarks to Queen Victoria." Let me, in reply, say, Not quite; for has he not read, as most old-headed gardeners have, over and over again, that the wall trees of the Queen are proverbial for the skill displayed in their training as well as for productiveness? I have read many such allusions to them, and have often thought I should like to see the handiwork of the Royal pruners and trainers in covering garden walls attractively and profitably at the same time.

This combination is to be found in other gardens, and when seen is always admired. But the examples are few in comparison with those of the earlier years of the century; then they were the rule, but now, unfortunately, the exception. Practically all the old masters in training who are still living must know that it is so, admit it, and regret it; indeed there is not wanting a glimmer between the lines of Mr. Oldhead's letter that he is one of them; at least he assumes to know the cause of the evil.

As to the suggestion that those gardeners who have not acquired the art of training fruit trees as objects of beauty with utility, not being readers of this Journal, I am able to assure my brief, though lively, critic that in the two instances of spoiled trees specified in my notes on page 52, both gardeners in whose charge they are take the paper weekly, and as one of them had received a private lesson on the method of treating the trees for effecting some possible improvement, he was not surprised by the reference; nor does he resent it. He is in many respects an excellent man, a splendid plantsman, and good Grape and vegetable grower, but in his training in three gardens had never had a lesson in the proper management of wall trees from their youth upwards, and had never had the subject impressed on his mind as one of importance. He knows it is now. In the other instance the gardener found the trees in the deplorable state described, and is doing his best with them, but it is impossible for him or any man to make them what they ought to be. It may perhaps be stated as a fact, and not without significance, that because of the unsatisfactory condition of the wall and other trees, the nurseryman who supplied them was wrongly blamed, and when this was made clear the real spoiler of the trees had to "go." He really paid little or no heed to them, his thoughts and sympathies being concentrated in other directions.

On the question of the growths of fruit trees extending 3 or 4 feet above the top of a wall, which trees Mr. Oldhead imagines cannot be in the hands of a "gardener," I have no objection to giving him an example of my own ignorance. Half a dozen years ago I was invited by a gentleman to examine his garden and fruit trees. Fifty or more years previously the Pears on a long but not very lofty wall had been beautifully trained, but the last dozen years or so they had been grossly neglected. The mansion had been for a time unoccupied, and the garden let to a local greengrocer, who was to keep the trees in order. There was practically no growth over the face of the wall, beyond dwindling attenuated spurs, absolutely incapable of bearing fruit. The trees grew from the top only above the wall every summer, and the

shoots were levelled down every winter. The trees were like top-heavy old espaliers, occasionally seen in ancient gardens, and which, treated in the same way, bear little or no fruit.

The new tenant, who had taken the residence for fourteen years, wished to know how the old trees could be made to bear. He was advised to root them out and plant cordons, which would pay him over and over again during his lease. He said "no," most emphatically; he was not going to plant for whoever might come after him. He was then told he could get no fruit from the branches of the trees against the wall, but might have Pears, if he would let the branches grow above it. To that he had no objection at all, but rather liked the idea, as the fringe along the top would form a screen from neighbouring windows.

The advice thereupon given was this. Let some of the growths above the wall remain unshortened, these to be about a foot apart. Cut out all others between them, and permit no others to grow in their places, but rub all spring shoots that threaten to do so clean out by their sockets, then the young unshortened branches will produce blossom buds in two years, and weather permitting bear fruit. The gardener the gentleman brought with him agreed. There is now a hedge along the top of the wall, and ten times more fruit has been obtained from it than from all other parts of the trees, or than they had borne for five years previously.

This is mentioned for two reasons. 1, To show that I am not a faddist and would be content with straight equally disposed branches and no fruit. 2, That there are gardeners, or "so-called," who really would allow such extensions when fruit could not be otherwise had from such trees. All the same, it would have been better to plant cordons, and thus render the wall ornamental and useful, as all the boundary walls of gardens ought to be—covered from base to summit with straightly trained fruitful branches, whatever form the trees may be, cordons, horizontals, fans, or palmette verriers.

Mr. A. N. Oldhead will note the singular coincidence that my initials are the same as his, but I cannot help that; it may be fortunate in that it may perhaps dispose him to treat this my rejoinder tenderly.—A. N. O.

APPLES AND FROZEN WATER PIPES
SPLITTING.

WITH regard to the differing views held by your correspondents, as to when water contracts and when it expands, is it not possible that both factions may be partly right? I believe it is a well understood chemical law that water reaches its maximum density at 4° Cent., or 39.2° Fahr.; and being an exception to all other liquids, expands both above and below that temperature, so that the water pipes of "A. D.," and the thin-skinned Apples of "H. Richards" might both have been burst by the same means—namely, the expansion of water.

I scarcely think that Mr. Richards has ever seen a frozen pipe burst by applying heat to it, as the ice would first have to be thawed, and then the water heated to 39.2° before it began to expand again, and it would require considerable heating to cause it to occupy a space greater than that taken up by the ice. He probably did not notice that the pipe was burst till the water began to leak out.

I rather fancy that Mr. Richards would have to plug up his pipe at both ends to prevent any escape, and then boil the water in it to get it to burst. However, to some of us, who may have neither time nor inclination to amuse ourselves with water pipes, marmalade jars and tobacco tins, the word of those scientists who have made a study of the subject is sufficient.—A. DAY, *Herts.*

ERE "rushing in" with another moral to adorn this lively tale, one would like to propound another question, the answer to which should throw some light upon the matter—viz., What killed the man who fell from the church steeple? was it the fall or the sudden stop? I think Mr. Richards will admit that, as a rule, the effect of frost is not easily seen until the thaw sets in; but that the effects are there, whether it be ruptured vegetable tissue or fractured pipes, seems to be clear. That the application of heat, whether of solar rays on the one hand or of fire heat on the other, accentuates the evil is obvious.

Heat expands some objects, if there is room for expansion, but if frost has not room for expansion it will split a mountain to vent its mighty force. With heat this is not the case, unless there is room to generate steam, then it would disembowel the earth itself. The hardest nuts to crack are often minus a kernel, but if Mr. Richards will tackle this one he will doubtless be rewarded for his pains, although it may somewhat painfully shatter his statement, "Engineers always leave vent for expansion." Thirty years ago there was a system of hot-water heating on the Continent which comprised a copper boiler and a single 6-inch copper pipe carried the length of the plant house. These—boiler and pipe—were filled, absolutely filled, when fixed (no room for expansion, no room for steam, no room for anything), and then hermetically sealed, and in the normal course of things not touched afterwards. By this system, if memory serves aright, it is possible to raise the heat of water to about 600° Cent. This system was described (and illustrated to the best of recollection) in the "Revue de l'Horticulture Belge," a monthly magazine which then (thirty years since) filled up a niche in the bothy leisure of—A. N. OLDHEAD.

CINERARIA CULTURE.

CINERARIAS are amongst the most brilliant of greenhouse plants, and without much difficulty they may be had in bloom late in autumn and onwards through the winter, though the most important display of fine plants and large heads of bloom is usually found in February or March. The chief enemy to guard against in Cineraria culture is the

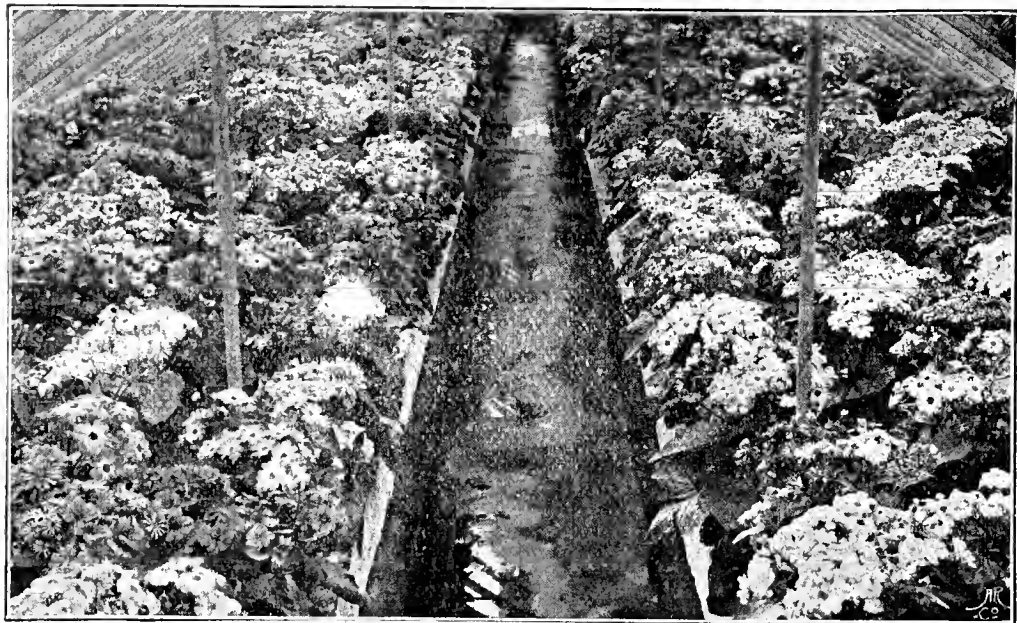


FIG. 28.—CINERARIAS AT PERRY HILL.

aphis or green fly, and plants in or approaching bloom now require the coolest of treatment consistent with keeping out frost from the structure in which they are growing. When plants become attacked with the pests they ought to be frequently fumigated with tobacco paper or vaporised with nicotine, the latter being the better method. Special attention should be given to freeing the plants previous to flowering, as they suffer considerably in appearance if the aphides are allowed to increase upon them. They not only abstract the juices from the foliage, and cripple growth, but they leave a deposit which mars the appearance of both leaves and flowers.

This enemy is largely encouraged to attack the plants when they stand on open shelves in a dry heated structure. To prevent this the stage should be covered with some moisture-holding material, and the heads of the plants situated not far from the glass. A temperature of 40° to 50° suits Cinerarias best, and in it they will progress healthily and steadily. A little shade is beneficial to the plants when in full flower during March or April in strong sunshine. At this period, too, the pots are full of roots, therefore watering must be regular, and be given in sufficient quantity to pass through the whole ball of soil and roots whenever the least dryness is apparent on the surface. Cinerarias soon feel the stint of water, and the foliage droops and is distressed in consequence. Liquid manure may be given to healthy plants well furnished with roots, but not before they show flower spikes, and it ought never to be applied in a strong state. The applications must cease when the blooms begin to open fully, sustaining the growth afterwards with clear water.

Cinerarias are best raised from seeds, employing a good reliable strain. The single varieties are the more useful. For an autumn display sow seeds in March and April. To furnish plants for the spring display later sowings in May or June are soon enough. Prepare shallow seed pans by effectively draining with a well placed layer of crocks, covering them with moss or clean fibre, so that soil cannot be washed down among them. Next introduce the compost, which should be composed of sweet fibrous loam and leaf soil made porous with sand. Thoroughly mix the whole together into a moist, but not a wet condition. Fill the pan to the brim, level, shake down, and press smoothly. Give a gentle watering with a fine rosed can, and after draining sow the seeds thinly on the surface. A mere dusting of sand or soil will suffice to cover the seed.

No further watering should be needed until germination has taken place, and it will not be necessary if the evaporation of moisture from

the soil is prevented by placing the pan in a moist position and covering with a pane of glass and paper. The latter must not remain after the seedlings have pushed through the covering, and the glass may be gradually dispensed with, elevating the pan close to the light in an airy, cool greenhouse. Shade from strong sunshine, and when the soil shows that water is needed immerse the pan to the rim in tepid water, not to flood the surface, but so that it can percolate through the soil from below. Immediately it shows on the surface withdraw the pan from the water.

If the seedlings are not crowded they may be allowed to progress to a considerable size before pricking them out singly to strengthen, but they must not remain in the seed pan to injure one another. Similar compost to that used for sowing the seeds may be employed for the transplanting. The largest plants are not always the best, and it may safely be asserted that those seedlings which take the lead in growth are not the plants which are capable of producing the best flowers, therefore do not discard the smaller. Pricking out the seedlings is essential, as it affords them room to grow, and causes fibrous roots to be developed, which are of great assistance when placing the plants in their first pots. From the time of pricking out the seedlings, which may be done in pans or boxes, cold frame treatment will be the most appropriate. If the frame is not in a shady position, shade the seedlings from strong sunshine. Sprinkling the plants daily will insure sufficient moisture until they become better established, when more water may be given.

The next move may be to 4-inch pots, using a compost of two parts loam, one leaf soil, one decomposed manure, and plenty of sand. The plants grow better if potted rather lightly. Place them in a cold frame in a north aspect, where shading will not be required. The pots should stand on a moist base of coal ashes, which also excludes worms from the soil. Maintain the frame close for a time, but after growth has recommenced admit air more freely. Sprinkle the plants daily in dry hot weather, and afford water to the roots as required. Place the plants in larger pots when these have become filled with roots, still continuing frame treatment with abundance of air. In July and August the lights may be removed, especially at night, so that they may receive the benefit of any dew which may fall, but protect the plants from very heavy rains.

Cineraria stellata, the Star Cineraria, hybrids of *C. cruenta*, the result of crossing the old *C. cruenta* with the greenhouse variety, produces large heads of flowers on long stalks, the individual blooms, however, being smaller than the ordinary single Cinerarias. It is free flowering, and admirable for decoration and cutting. The method of cultivation is similar to that accorded the ordinary form. For certain

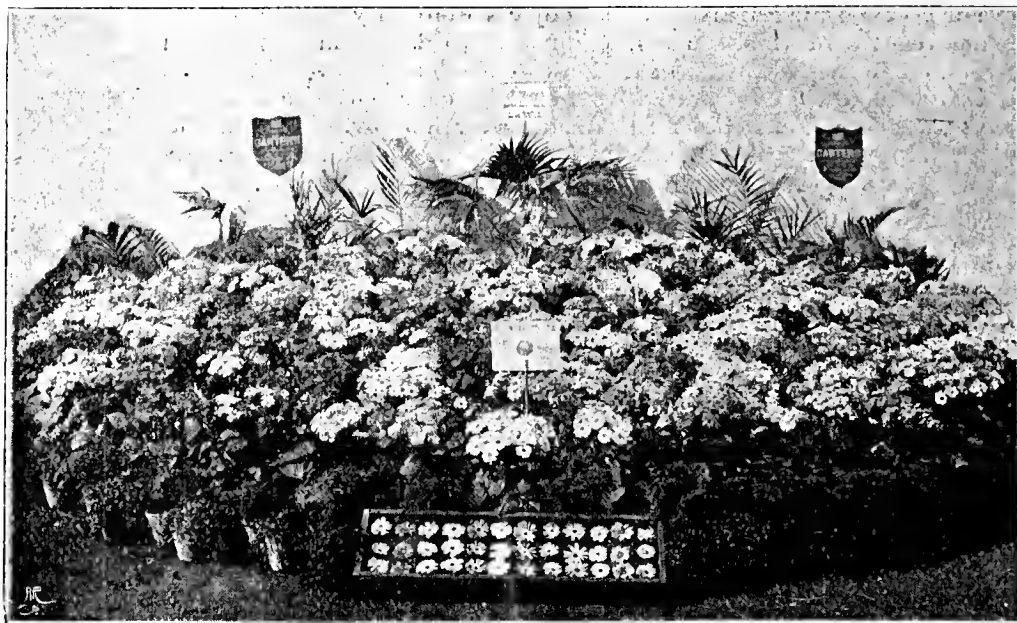


FIG. 29.—GROUP OF CINERARIAS.

positions in large conservatories it is splendidly suited, as also is it for providing an abundance of cut flowers.—E. D. S.

[Many of the catalogues issued periodically by the nurserymen and seedsmen of this country are fast becoming true works of art, and amongst the foremost this season is that of Messrs. Carter & Co.,

High Holborn. The firm has, on the present occasion, embodied in its "Vade Mecum" a history of the house, which was established in 1804. Photographic reproductions of the covers of ancient and modern catalogues are given, as also are illustrations of various portions of the extensive seed warehouses, with views of the nurseries at Perry Hill, Mortlake, and the seed farms in Essex. The Perry Hill nursery is devoted to florists' flowers, and Cinerarias form a prominent feature in

beautiful and make a more attractive display than the double forms will be generally acknowledged, but, at the same time, the latter ought not to be omitted entirely. In establishments requiring large numbers of flowering plants it is desirable to obtain a sufficient stock by the aid of several different kinds of flowers, and it is here that the value of the double Cineraria is most highly appreciated. The flowers are distinct in form, and are now to be procured in various colours, and



FIG. 30.—AN ORCHID SHOW HOUSE.

their season. By the courtesy of Messrs. Carter & Co. we are enabled to place before our readers one of the houses of Cinerarias when in full bloom (fig. 28), and a group (fig. 29) of the same plants arranged at one of the exhibitions of the Royal Botanic Society.

As our contributor confines his remarks on propagation exclusively to the raising of stocks from seeds, it may naturally be inferred that he is advocating the culture of single Cinerarias. That these are more

these, like those of many other plants, have improved very materially of late years. Not only are double Cinerarias superior in colour, but the habit of the plants has become more compact, and this without any indication of stubbiness. These, like the single varieties, can be readily raised from seeds, but it is advisable where a particular colour is wanted to propagate from cuttings in the manner that was adopted for all Cinerarias in the days gone by.]



"THE ROSARIAN'S YEAR BOOK."

VERY many years have come and gone since "The Rosarian's Year Book" first saw the light, but it, nevertheless, under the skilled and loving guidance of the Rev. H. Honeywood D'Ombraïn, maintains its popularity and its practical utility. Each year brings its new edition and each issue contains something different from its predecessors, and consequently the interest continues unabated. It is a labour of love for the great florist, as is everything in connection with the flower he knows so well, and at whose shrine he has worshipped for such an exceptionally prolonged series of years.

The "Year Book for 1900" has for a frontispiece a speaking portrait of that excellent amateur rosarian, Mr. Henry Vessey Machin, of Gateford Hill, whose photograph has appeared in the *Journal of Horticulture* on more than one occasion in connection with "big wins." The sketch of Mr. Machin's life is from the graceful pen of Mr. Chas. J. Grahame, who speaks highly of the enthusiasm of this the largest of amateur Rose growers. The Rev. J. H. Pemberton, whose renown as an exhibitor is second to none, has some "Recollections of Some New Roses of 1899," while Mr. George Paul, V.M.H., deals in the style of a master with "Garden Roses: Planting and Pruning." The Editor takes as his text "The Rose and the National Rose Society in 1899," and gives a most interesting article. "Amateur Rose Culture," by Mr. R. E. West, is excellent and worthy of this successful grower. He is always practical and yet continuously readable, and his advice can be explicitly relied upon, especially that about maggots, which says:—

Maggots fat, maggots lean,
Maggots large, maggots green,
Maggots long, maggots short;
Catch 'em soon, or Roses nought.

Mr. Cecil E. Cant dilates upon "Standard Roses," with which he is fully qualified to deal. As in his opening sentence he objects to some of the references to this form of Rose culture that appear in the gardening Press we have reproduced his contribution in the hope that it may prove serviceable to our readers. As is customary, the conclusion of the book is left to Mr. E. Mawley, and his topic is "The Weather of the Past Rose Year," and this, though last, is not the least valuable of the contributions.

STANDARD ROSES.

One frequently reads in the gardening papers articles on standard Roses, but the summary of them generally amounts to how not to grow them, or ends in advice not to give them a trial, but the real origin of their want of success in some gardens has more to do with the selection of unsuitable varieties than anything else. How often one comes upon a stem with no head to speak of, and yet is supposed to do duty for a standard. On looking at the label one finds Horace Vernet, or Boildieu in a lingering death. Such varieties and notorious bad growers should never be grown, and are entirely the cause of the outcry against standards; but if a careful selection of suitable varieties is made, standards are very useful in various ways—viz., to form a background of two or three rows of dwarfs, as a centre to round or oval beds, also for planting out in conservatories; then again, they are best in small enclosed gardens, as the height of stem brings the head free of other growths and to a brighter atmosphere; as an aid to success at the exhibitions the standard Teas and Hybrid Teas are indispensable, and the standard as a weeping plant can be used with great effect.

Now, to deal with the last first. Standards on stems 5 to 7 feet high, to be planted singly in various parts of the garden, or to form a centre in a large bed, make very handsome and attractive objects. They must be firmly staked, and the long, trailing shoots should be arched over and tied to the stem, umbrella fashion, to grow as weepers. After one season the shoots will retain their positions, send out lots of laterals, and thus form a handsome tree, blooming freely throughout the summer. The best sorts for treating in this way are Aimee Vibert, white; Celine Forestier, yellow; Claire Jacquier, yellow; Crimson Rambler; Felicite Perpetue, white; Fulgens, crimson; Longworth Rambler, red; Madame Alfred Carriere, cream; Paul's Carmine Pillar; Paul's Single White; Reine Olga de Wurtemberg, red; Rêve d'Or, yellow.

One often hears at the great Rose Shows, "How is it so-and-so gets his Teas so large and full, such colour and so clean?" The answer nearly always is, "They are grown on standards and half-standards, thus keeping the blooms off the ground, away from many enemies, and clear of the splashes from heavy rains." Then, again, these

exhibitors of extra fine flowers will tell you more good! blooms result from one standard Tea than from four times the number of dwarfs, and they are quite right, as my experience goes. The standard Tea has suffered in the past from very sharp frosts, but a hardier race seems to be with us now, and to winter safely, with slight protection during very severe weather.

The following varieties of Teas and Hybrid Teas make excellent standards for either show or garden decoration:—

Hybrid Teas.—Antoine Rivoire, Caroline Testout, Clara Watson, Kaiserin Augusta Victoria, La France, Madame Cadeau Ramey, Mrs. W. J. Grant, Viscountess Folkestone.

Teas.—Anna Olivier, Bridesmaid, Catherine Mermet, Cleopatra, Comtesse de Nadaillac, Ernest Metz, Ethel Brownlow, Hon. Edith Gifford, Innocente Pirola, Jean Ducher, Madame Cusin, Madame de Watteville, Madame Hoste, Madame Lambard, Maman Cochet, Marie Van Houtte, Medea, Muriel Grahame, Rubens, Souvenir d'Elise Vardon, Souvenir de S. A. Prince, Souvenir d'un Ami, The Bride, White Maman Cochet.

The standard Hybrid Perpetuals and one or two of the climbing varieties are not recommended as aids to prizes, but are very useful in beds and borders, and as there must be some good rich colours amongst the pale Teas to set them off, the following sorts can safely be relied on to give satisfactory results:—Alfred Colomb, Auguste Rigotard, Boule de Neige, Baroness Rothschild, Bouquet d'Or, Clio, Dr. Andry, Duke of Edinburgh, Dupuy Jamain, Gloire de Dijon, Général Jacqueminot, Homer, John Hopper, Jules Margottin, Madame Berard, Madame Clemence Joigneaux, Madame Gabriel Luizet, Madame Victor Verdier, Magna Charta, Margaret Dickson, Merveille de Lyon, Mrs. John Laing, Madame Isaac Pereire, Monsieur Boncenne, Mrs. Paul, Paul Neron, Thomas Mills, Tom Wood, Ulrich Brunner, William Allan Richardson.

For conservatories, either for planting out or planting in beds outside and bringing the heads under glass as with Vines, the standard is indispensable. Many climbers and other varieties grown in conservatories must necessarily be planted under staging; the stem gets over the difficulty by bringing the head above the stage and obtaining the light necessary for its success. Such sorts as Maréchal Niel and Climbing Niphetos do splendidly in this way, last for many years, and give good crops of fine flowers, where dwarfs in similar positions would lack the light and never be a success.

There is no desire in these remarks to praise the standard beyond its merits, but simply an endeavour to prove there is worth in it, and that it is a good companion for the dwarf in many ways, and given suitable positions it will greatly aid in garden decoration.—C. E. CANT (in "The Rosarian's Year Book").

PRUNING MARÉCHAL NIEL.

"H. S." (page 92), accustomed with success to prune his own specimens of this Rose under glass by cutting away almost all the wood of the year immediately after flowering, is yet doubtful whether it is the better method, because of a comparison between this and a lighter style of pruning that he has seen in another man's house.

I do not think he gives us quite enough data to judge of the matter properly. For pruning such plants after the first year's growth and subsequent flowering, everything depends upon how much space each plant is intended ultimately to cover, and what progress it has made towards it. The house in question would probably be of the ordinary height; but how many rods—that is, what width of roof—was each plant expected to supply and cover? It seems plain, from the statement of the case, that none of them covered anything like the allotted space (as might be expected) the first year, for the best of them, slightly pruned, only got to the top of the house the second year.

These Roses had only been planted one year, and not having made luxuriant growth had probably not very strong root power. To cut away almost all the growth, and with it all the foliage in the midst of the growing season, is a severe check to any plant, and I advise that even with the strongest and best established it be done as gradually as possible as the blooms are gathered; and as these plants were not very strong, and had not each (apparently) covered more than half the space intended, it was clearly better that year to give them the benefit of their leaves, and avoid any check till the allotted space was covered.

It is, after all, only a question of room below and above. When once the available space for the plant is covered, what are you to do with the strong young rods formed in summer and autumn? and if such are not formed you will get no fine blooms. If, on the other hand, there is more available space to be covered, and a corresponding amount of room and food for the roots below, then go in for "extension," and do not prune so hard till the space is covered.

I agree that short standards are generally best for this work. My own plant, which gives me from 300 to 400 blooms every spring, was planted fourteen years ago, and has not said anything about dying yet.—W. R. RAILLEM.

NOTES ON ACACIAS.

THESE are among the most easily cultivated of greenhouse plants. Some have a tendency to make long straight shoots which are very suitable for training up pillars or upon rafters in conservatories, where they form grand ornaments in the late winter or early spring months. The most handsome in this respect of all the species is, perhaps, *A. Riceana*. Its graceful slender growths, depending like a Weeping Willow, render it singularly effective for training to a pillar or arch in a conservatory.

Acacias are very floriferous, but they need full exposure to light to insure the thorough solidification of the growth. Plants kept under glass through the summer, where they necessarily have to make their growth under the shade of climbers or a shaded roof, are not nearly so satisfactory as those placed outdoors from early or mid-June up to mid or late September. Without this accommodating nature they are hardly suitable for small houses, for whatever may be their heights described in lists, the plants generally much exceed the proportions accorded them. There is one thing, however, about Acacias that renders them more accommodating than other plants, and that is their bearing cutting well, and this means their being kept fresh looking in moderate sized specimens.

PRUNING.

The best time to prune Acacias is immediately after flowering. The principle, however, to be adopted is laying a good foundation by pinching and attention to pruning in the early stages, which, as most of the plants are raised from seeds, requires an effort, as the ambition of most growers is to get a large and early flowering plant as soon as possible. The plant must be headed early if it is to have a well-furnished base. The strong growth will monopolise all the sap, and so much so as to impoverish the weaker growths, whilst usually the more floriferous succumb. This must be prevented by cutting back the strong growths, and so equalise or distribute the sap, causing, as far as practicable, an equality of growth. The pruning may be to the old wood, but the growth will neither be so free nor desirable as from shoots of the previous year. In fact, when an Acacia becomes old, bare and tall, it is best to discard it altogether, and others should be grown to supplant it.

The pruning in most instances will be confined to shortening strong growths and irregularities, and cutting out weakly and dead wood, so as to have a compact specimen. This, if done as the plants cease flowering, will keep them in useful form for a number of years. They should be kept rather drier after pruning, and when fresh growth is being pushed they may be potted, merely loosening the sides of the ball, and transferring to pots a couple of inches larger, draining well, and in potting making the soil as firm as the ball. Three parts turfy loam of a friable nature, with a third of leaf soil or fibrous peat and a free admixture of sand, will grow them well. Water carefully, and sprinkle morning and afternoon until the roots have taken to the fresh soil, when as the growth advances they will require more copious supplies of water.

In June, as before stated, the plants may be placed outdoors, in a position fully exposed to the sun, but sheltered from winds. The pots should be stood on a concreted bottom or a good thickness of ashes, and be plunged to a little of the rim in that or similar material, allowing space between the plants for the free access of light and air. Copious supplies of water will be necessary, never allowing them to lack, or giving any until it is required, and always affording it so that the soil is moistened to the drainage. In these quarters the plants will make clean healthy growth, ripening the wood perfectly, and when that is effected a full amount of bloom may be expected. In hot weather a good syringing in the evening will be useful in cleansing the foliage and preventing attacks of red spider.

The plants should be housed at the end of September or early in October, assigning them a light airy position in a temperature of 40° as a minimum, and 45° to 50° as a maximum from artificial heat, in which they will flower. An effective display will be assured of what are at least showy plants, and though not as durable as many the sprays are useful in a cut state, the yellow balls or spikes, as the case may be, enlivening otherwise formal arrangements. They are also brilliant for decorative purposes indoors, and are in no way injured, even where there is gas, by a brief sojourn in corridors and halls; of course they cannot well be used in places that have a pale white or yellow ground, but they tell well against a ground of green or blue. Acacias, though of the freest and easiest culture, cannot bear overwatering. If ever the soil becomes sodden and sour the plant will lose its roots, and it will seldom if ever recover.

PROPAGATION.

Propagation is readily effected by seeds, which are best sown as soon as ripe, or they may be kept until the spring, using fibrous loam with a third leaf soil or peat, or the seeds may be sown in sandy peat. Cover about a quarter of an inch deep, more or less according to the size of the seeds, their diameter being a proper depth, and place in a house with a temperature of 55° to 60° artificially, and when up keep close to the glass to prevent drawing. Pot them when they are showing the second leaves, and keep in the same temperature well up to the glass until established; then remove to a cooler house or pit, where the plants can be grown sturdily.

Propagation is also effected by cuttings of the half-ripened wood, which taken off and inserted with a heel, root freely during the summer. Drain the pots well, and fill to within three-quarters of an inch of the rim with peat and sand in equal parts, surfacing with half an inch of sand, making thoroughly firm. Insert the cuttings at once, water well, and stand aside for a short time to dry, then place in a close frame or cover with a bell-glass, shading and watering so as to prevent flagging. They do not require heat, rooting as well or better in a close pit or house without heat. Pot when rooted, and keep in a close pit or house until well established.

VARIETIES.

The number of species and varieties of Acacias that are worthy of cultivation is very great, and a few are named as being particularly good in my own experience. I know many others that are favourites



FIG. 31.—ACACIA OVATA.

with various growers, but as I have not grown them they are not included here. My selection includes *cordata*, *pulchella*, *Drummondii*, *armata*, *diffusa*, *ovata* (fig. 31), *longifolia*, *magnifica*, *grandis*, *verticillata*, *cultriformis*, *dealbata*, and *olavifolia elegans*.—A. G.

FRUIT FOR BRAIN POWER.—According to a recent health report blanched Almonds give the brain the muscle food, and the man who wishes to keep his mental power up would do well to include them in his daily bill of fare. Juicy fruits develop more or less the higher nerve or brain, and are eaten by all men whose living depends on their clear-headedness. Apples supply the brain with rest. Prunes afford proof against nervousness, but are not muscle-feeding. At the same time, it has been proved, says a contemporary, that fruits do not have the same effect on everybody. Some people have never been able to eat Apples without suffering the agony of indigestion, to others Strawberries are like poison.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL GENERAL MEETING.

SHORTLY after the appointed hour of seven o'clock on Monday evening last, Mr. Percy Waterer took the chair at this important meeting. The large room at Carr's Restaurant was completely full, many persons present having to stand throughout the proceedings. Not only were London and suburban Chrysanthemum growers present, but many of the provincial affiliated societies sent representatives to look after their respective interests. The minutes of the previous annual meeting were taken as read, as were the report and balance-sheet given hereunder, these having previously been distributed to members.

REPORT OF THE EXECUTIVE COMMITTEE, 1899.

IN presenting their annual report your Committee feel they can congratulate the members upon a condition of affairs in relation to the Society of a generally satisfactory character. Their exhibitions have maintained their high quality without decreasing in extent, the hold of the Society upon the numerous provincial and foreign Societies affiliated to it is as wide and firm as at any time, the work of the Floral and Classification Committees has been carried out with spirit, the financial position of the Society is decidedly encouraging, the balance-sheet statement for the year showing a substantial balance in hand, while the assets of the Society are of an improved character. Your Committee recommend that the sum of £50 of the reserve fund, now on deposit, be increased to £100.

The three exhibitions held by the Society, although affected to some extent by the incidence of a late spring, and summer so continuously hot and dry as to materially affect the well-being of the plants, yet brought together singularly fine blooms of the Japanese type, though the incurved blooms were scarcely so numerous and refined as in previous years. Still, let the character of the season be what it may, the cultivators of Chrysanthemums rise superior to antagonistic influences, and are always found producing blooms of high excellence. It is not without feelings of regret your Committee note that the incurved, the

reflexed, and the Anemone-flowered types appear on the exhibition stages in decreased numbers, though this fact may not, of itself, justify any apprehension that there is an actual lack of interest in the culture of the varieties of these sections.

The vase class was the leading feature at the November exhibition, and made a most imposing display, arousing a large amount of public interest. The competition was numerous and keen, though some who had entered for competition found themselves at the last moment unable to bring their flowers. The large-hearted liberality shown by Messrs. James Green & Nephew in providing such a considerable number of handsome vases free of charge for the purposes of the class was highly appreciated by your Committee. At all the exhibitions, miscellaneous exhibits, mainly supplied by the trade, afforded features which enhanced the interest of the various displays, and imparted an attractive variety as well.

It is satisfactory to notice that the competition among affiliated societies for the possession of the challenge trophy is maintained with spirit. Still it is desirable more societies should take part in the annual contest. The possession of the Holmes' Memorial cups appears to continue to fire the ambition of growers, and give occasion to close competitions.

Your Committee are under a great obligation to their President, Sir Edwin Saunders, for his valuable special prizes; to the Chairman, Mr. P. Waterer, for his special prizes for an essay on the Chrysanthemum rust, which failed in its objects; and to other donors of special prizes which enable the Committee in a few instances to introduce special features into their schedule of prizes.

A sub-committee have had under consideration the relation existing between the National Chrysanthemum Society and affiliated societies, and having reported that it is desirable certain amendments be made to the privileges enjoyed by affiliated societies, your Committee have adopted the same; and as alterations in the rules are, made necessary, such alterations will be proposed for adoption at the general meeting.

In November last a deputation from your Committee visited Lyons in response to an invitation from the Secretary of the French National Chrysanthemum Society, for the purpose of taking part in an important exhibition of Chrysanthemums; and an interesting account of the proceedings of the same, compiled by Mr. C. Harman Payne, will be published with the annual report, &c. A very hearty vote of thanks was passed by your Committee to the deputation, they at the same time placing on record their belief that the exchange of international courtesies in this and other ways between home and foreign cultivators and lovers of the Chrysanthemum is most desirable, and should be promoted in every possible way.

FINANCIAL STATEMENT, 1899.

Dr.	RECEIPTS.	
To Balance brought forward ...	£18 0 11	
„ Annual subscriptions, 1897 ...	£0 5 0	
„ „ „ 1898 ...	11 5 6	
„ „ „ 1899 ...	253 18 0	
„ „ „ 1900 ...	1 5 0	
	£266 13 6	
„ Donations and special prizes, 1899 ...	£146 1 0	
„ „ „ „ 1900 ...	5 5 0	
	£151 6 0	
„ Royal Aquarium Company—		
October Show ...	£75 0 0	
November Show ...	250 0 0	
December Show ...	50 0 0	
	£375 0 0	
„ Bill posting, as per contra ...	11 14 10	
„ Entry fees ...	16 5 0	
„ Rent of space, 1898... ..	19 18 0	
„ „ „ 1899... ..	39 3 6	
	£59 1 6	
„ Affiliation fees, 1898 ...	£7 17 6	
„ „ „ 1899 ...	61 19 0	
	£69 16 6	
„ Affiliated Societies, medals, &c., 1898 ...	£4 4 0	
„ „ „ „ 1899 ...	60 2 0	
	£64 6 0	
„ Medals sold ...	6 6 2	
„ Sale of catalogues ...	2 6 10	
„ Sale of year book, as per contra ...	0 4 3	
„ Sale of tickets ...	12 11 9	
„ Advertisements in schedule, 1898 ...	£5 5 0	
„ „ „ „ 1899 ...	24 14 0	
	£29 19 0	
„ Donation to expenses of annual dinner ...	1 3 4	
„ Foreign corresponding Secretary's account—		
Foreign members' subscriptions ...	£6 2 4	
Affiliation fee ...	0 10 6	
Medal ...	0 16 6	
Catalogue ...	0 1 0	
Advertisements ...	0 12 6	
Tickets ...	0 2 0	
	£8 4 10	

£1093 0 5

	EXPENDITURE.	Cr.
By prizes—October Show ...	£84 9 0	
November Show ...	379 13 0	
December Show ...	44 11 0	
	£508 13 0	
„ Medals awarded at Shows—		
4 large gold, 7 gold, 16 silver-gilt, 19 silver,		
11 small silver, 13 bronze.		
„ Judges' fees ...	£24 3 0	
„ Printing and stationery ...	69 19 6	
„ Expenses of audit, 1898 ...	1 13 5	
„ Donation to Royal Aquarium employés ...	2 2 0	
„ Solicitor's costs <i>re</i> Stredwick ...	5 18 7	
„ Medals, Messrs. Spink & Son's account ...	142 5 3	
„ Illuminated address ...	3 15 0	
„ Vases ...	3 0 0	
„ Cartage ...	7 2 6	
„ Expenses of Floral Committee ...	1 14 5	
„ Expenses of annual dinner ...	12 9 9	
„ Expenses of Floral Committee dinner ...	3 4 0	
„ Commission on advertisements ...	2 2 0	
„ Advertisements in Gardening Press ...	6 15 0	
„ Fire insurance premium ...	0 7 6	
„ Tickets, Royal Aquarium ...	8 0 0	
„ Clerical assistance ...	2 2 0	
„ Judges' Luncheons ...	22 1 9	
„ Sundry expenses at Shows—		
Staff luncheons ...	£2 17 9	
Labour and assistance ...	10 8 6	
Paper for tables and pins ...	0 10 6	
Gratuities ...	4 6 6	
Hotel—Secretary and others ...	2 1 0	
Secretary, out-of-pocket expenses ...	0 12 6	
Sundry items ...	4 14 7	
	£25 11 4	
„ Bill posting, as per contra ...	11 14 10	
„ Petty cash—postages ...	£41 12 5	
Telegrams ...	1 2 1	
Travelling and other expenses ...	4 3 2	
Carriage ...	1 17 3	
Sundries ...	0 6 3	
Messengers ...	0 4 1	
	£49 5 3	
„ Secretary's salary ...	100 0 0	
„ Foreign Corresponding Secretary's account ...	1 5 11	
„ Transfer to reserve fund ...	0 4 3	
„ Banker's charges ...	1 5 8	
„ Balance at bank ...	76 4 6	

£1093 0 5

RESERVE FUND.

Dr.	RECEIPTS.	
To Balance on deposit account	£50 0 0
„ Balance on current account	22 11 9
„ Cash	0 17 3
„ Interest on deposit	1 2 2
		£74 11 2

	EXPENDITURE.	Cr.
By Balance on deposit account	£50 0 0
„ Balance on current account	24 11 2
		£74 11 2

BALANCE-SHEET.

	LIABILITIES.	
To Advertisements in Gardening Press	£4 2 6
„ Engraving medals and cups	13 14 6
„ Messrs. Spink & Son.—Medals	3 4 6
„ Printing and Stationery	6 9 0
„ Hire of rooms for meetings	3 10 0
		£31 0 6

	ASSETS.	
By Balance on general account	£76 4 6
„ Balance on deposit account	£50 0 0
„ Balance on reserve current account	24 11 2
		£74 11 2
„ Arrears, members' subscriptions	£10 0 0
„ Arrears, affiliation fees	11 11 0
„ Due for medals	14 9 0
„ Due for advertisements	2 11 0
„ Due for space	23 15 0
„ Due for tickets	2 8 0
		£64 14 0
„ Tickets (96) in hand at cost price	£2 8 0
„ Medals in hand at cost price	26 16 0
„ Jubilee catalogues in hand, estimated at	5 0 0
„ Various properties at the Royal Aquarium	7 0 0
		£41 4 0
		£256 13 8

Audited and found correct { JOHN R. CHOLMELEY.
F. J. BERRIDGE. January 22nd, 1900.

The Chairman in moving the adoption of the report and balance-sheet was very brief. On the whole he considered everything to be quite satisfactory, with the exception that incurred varieties were not shown so well as he should have liked at the November show. He considered the date rather too early for this section, and looked for the time when by increasing the prizes for incurred a good display might be brought together in December. He regretted one omission from the report of the Committee, which had reference to the visit that was paid by the members of the Society to Mentmore last summer. This he characterised as one of the most enjoyable outings it had ever been his pleasure to participate in, not only because of the splendid gardens, but because it had provided the unique opportunity of seeing two Derby winners under one roof. The finances, he was pleased to be able to say, were in a very much better state than heretofore. He deplored the fact that the annual dinner was not self-supporting, and trusted steps would be taken to make it so in this and succeeding years. In furtherance of this object he would suggest the reduction of expenses for professional talent. Mr. Langdon contented himself with being the seconder, and added no remarks.

Mr. Simpson followed, and made some trenchant remarks respecting the services of professional talent at the dinners, and reminded the meeting of the occasion when amateurs were relied upon, and his strictures on them were by no means complimentary. He considered that if the Society could pay over £20 for judges' luncheons they could afford about £12 towards the annual dinner. Mr. Newell also made a few pointed allusions to the dinner, maintaining a somewhat critical tone throughout. Mr. J. W. Moorman, who has on previous occasions been severe in his remarks on the management, had been forced, in view of the changed condition of affairs, to alter his tone, and was of the opinion that though there might, and doubtless were, a few faults to be found, the Society had just reason for self-congratulation, as through various beneficial changes they were improving in status, and were working towards that independence which alone can insure the greatest good being done. Mr. Dean then lucidly explained one or two points in the financial statement. The motion was put to the meeting, and carried unanimously.

The election of officers for the ensuing year was then proceeded with, and in rapid succession the following appointments were made, and in every case without a dissentient voice;—President, Sir Edwin Saunders; Chairman, Mr. Percy Waterer; Vice-Chairman, Mr. T. Bevan; Treasurer, Mr. C. E. Wilkins; and Honorary Foreign Corresponding Secretary, Mr. C. Harman Payne.

Then came the event of the evening—namely, the appointment of a General Secretary, and the members present prepared themselves for something sensational. In this they were not disappointed. The Chairman rose and stated that he had a paper on which there was neither a proposer's nor a seconder's name, and he therefore took upon himself the task of proposing Mr. Richard Dean as General Secretary for the ensuing year. In doing this he spoke of the work that had been done by Mr. Dean in the past, and thought that this should be taken into consideration. He further paid a tribute to Mr. Dean's energy and perseverance, as did Mr. R. Ballantyne, who was the seconder, and in both instances the expressions were well received. Mr. T. Bevan came forward with an amendment in the form of a motion—"That the election of the General Secretary be postponed; and that an advertisement be inserted in the gardening papers for a properly qualified person to fill the post at a salary of one hundred pounds per annum." In supporting this Mr. Bevan made some very serious allegations, and it was easy to see that in doing this he gave himself much pain, but carried it through conscientiously, as he considered it his duty, in the interests of the welfare of the Society. Mr. W. Wells seconded the amendment. There were several speakers, all more or less to the

point, for and against the amendment; but we do not consider it desirable that we should give detailed reports, as some of the remarks were certainly irrelevant, and not always couched in strictly Parliamentary language. Mr. Dean made, as might have been expected, a very strong defence. He spoke deliberately, and was frank in admitting errors and expressing regret, and, as he said, "What more could an English gentleman do?" On being put to the vote the amendment received four supporters only, and the Chairman's proposition that Mr. Dean be elected was heartily carried.

ELECTION OF COMMITTEE.—Upwards of a score of gentlemen were nominated to fill the fifteen vacancies on the Committee, and of these the following were elected:—Messrs. J. H. Witty, 72; J. W. Moorman, 68; D. Ingamells, 67; J. Lyne, 61; A. Newell and W. A. Sturrock, 56; Cuthbert, 51; J. R. Cholmeley, 49; W. A. Holmes, 47; R. E. Reeve, 46; T. G. Swales, 44; J. Brookes, 42; G. F. McLeod, 38; A. J. Foster, 37; and E. Dove, 36.

PROPOSED ALTERATION OF RULES.

The discussion relative to these matters was heated at times, but it would serve no useful purpose to give the names of the participators therein. The results of the voting are shown beneath.

The following amendments to the rules of the Society were recommended by the Executive Committee:—

X. AFFILIATED SOCIETIES.—Subject to the sanction of the Executive Committee, any Chrysanthemum or horticultural society may become affiliated to the National Chrysanthemum Society on payment of an annual affiliation fee of half a guinea, such fee entitling it to the following privileges, subject to the conditions hereafter named:—

To delete privilege No. 1 as follows:—

PRIVILEGES.

1.—To appoint one of its *bonâ-fide* subscribers as a delegate to the Executive Committee of the National Chrysanthemum Society, with power to vote at all meetings, unless otherwise specified.

And the following substituted:—

"To appoint one of its *bonâ-fide* subscribers, who is also a member of the National Chrysanthemum Society, as a delegate to the Executive Committee of the National Chrysanthemum Society, with power to speak and vote on any subject except finance." Carried unanimously.

Notice of amendment by Mr. J. W. Moorman to the foregoing new privilege as follows:—

To delete the words "who is also a member of the National Chrysanthemum Society." Carried.

In the event of the foregoing amended privilege being adopted, to add after "Fellows" in the first line of Rule IX. as follows:—

IX. PRIVILEGES.—All Fellows, members, and delegates from affiliated societies shall be entitled to vote at the general meetings of the Society. Fellows shall be entitled to four passes; members subscribing half a guinea to two passes; and those subscribing five shillings to one pass, to all the Society's exhibitions and meetings of the Floral Committee.

The word "and," and delete the words "and delegates from affiliated societies." Rendered unnecessary by the preceding.

To add the following two new privileges, to be severally numbered 2 and 3:—

2.—"That such delegate be annually elected by the Society appointing him at a properly constituted meeting of such Society." Carried.

3.—“That a copy of the resolution appointing such delegate be sent to the Secretary of the National Chrysanthemum Society, with an intimation to the effect that the appointment was made in due order.” Carried.

To rescind Condition 1 of Rule X. as follows:—

“That the Society’s medals and certificates be awarded only in classes for plants or cut blooms of Chrysanthemums, and that all inscriptions be recorded thereon before being handed to the winners.”

And substitute for it the following:—

“That with the one special exception hereafter mentioned, the Society’s medals and certificates be awarded only to classes for plants or cut blooms of Chrysanthemums, and that all inscriptions be recorded thereon before being handed to the winners; but affiliated societies obtaining the medals of the Society are permitted to purchase one extra medal, which may be awarded to non-competitive exhibits of any kind at their exhibitions, at the discretion of the Judges.” Carried.

These accepted propositions necessitated some slight alteration in the established rules, and these having been formally made the meeting closed.

APPLE HORMEAD’S PEARMAIN.

At the meeting of the Royal Horticultural Society, held in the Drill Hall on January 23rd, Messrs. G. Bunyard & Co., Maidstone, exhibited a small collection of Apples. Amongst these was a magnifi-

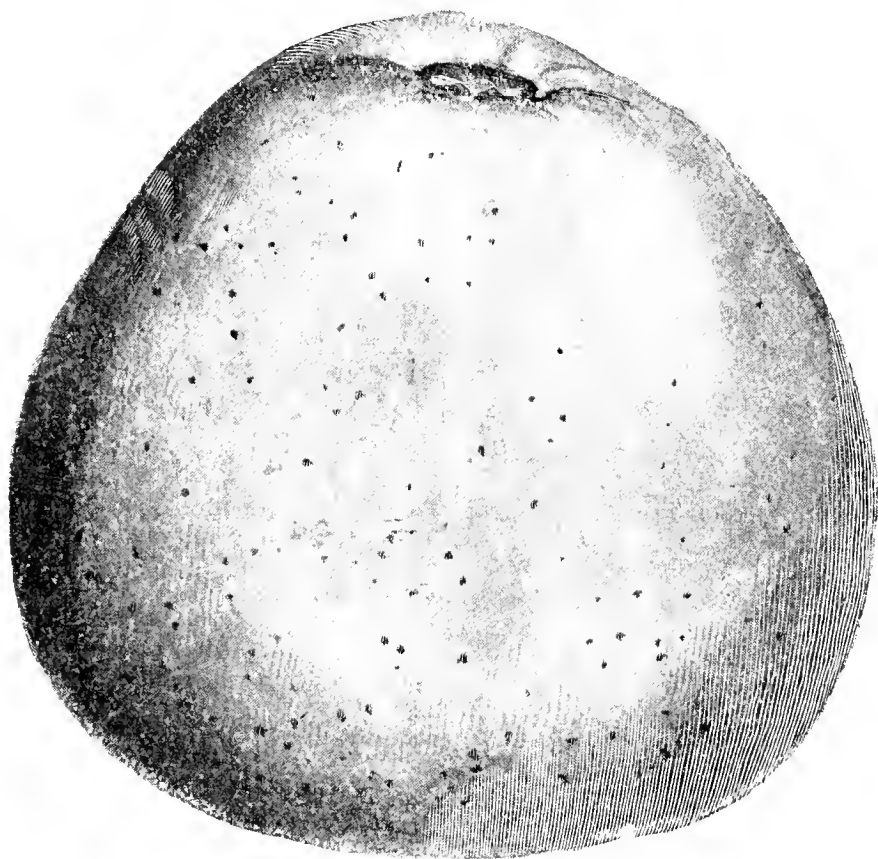


FIG. 32.—APPLE HORMEAD’S PEARMAIN.

cent dish of Hormead’s Pearmain (fig. 32), for which the Fruit Committee recommended an award of merit. This variety is comparatively well known, and is described in Dr. Hogg’s “Fruit Manual” as follows:—

“Fruit, medium sized, $2\frac{1}{2}$ to 3 inches wide, and $2\frac{3}{4}$ inches high; even in outline, and roundish. Skin, greenish yellow, becoming quite yellow when fully ripe, and an orange tinge where exposed to the sun; there are here and there traces of thin russet. Eye, partially open, with flat convergent segments, set in a wide basin. Stamens, median; tube, short, funnel-shaped. Stalk, short and stout, with sometimes a fleshy swelling on one side, surrounded with a patch of russet. Flesh, firm, crisp, very juicy, and pleasantly acid. Cells, roundish obovate; axile. An excellent cooking Apple; in use from October till March.”

ASTER SINENSIS.—The double varieties of Asters have long been in the ascendant, and too few realise the value and beauty of the single varieties, which are most telling. One of the best is Aster sinensis, which adds such brightness and grace as to make it valuable as a cut flower, the beautiful pale mauve florets and bright golden disc being most convincing. The habit of the plant is pretty, and it is undoubtedly a welcome addition to the summer occupants of the flower garden. Seeds will soon have to be sown, and anyone on the look out for a good thing cannot go far wrong in ordering.—R. BEAUMONT.

THE YOUNG GARDENERS’ DOMAIN.

BITS FOR THE BOTHY.

TO OUR RECRUITS. (Continued from page 82.)

LEST it should be inferred by the suasive tone of our introduction that we are flaunting the flag in order to lure young men into the ranks, it must be emphatically stated, and distinctly understood, that such is not the case. Volunteers only are wanted, and with these it would be an excellent plan could examination test their fitness for the force. More than once has an anxious mother inquired about gardening as a vocation for her boy, to be answered by another question, asking the reason why gardening has suggested itself. In most cases the reason given is no reason at all, and in some there is every reason for advising that the boy’s tastes and talents should be directed into another channel, to which his inclinations trend. At this stage the parental element cannot be wisely excluded from this paper, hence no apology is needed for bringing mothers into council to prevent a mistake—a life’s mistake, maybe, which is the most serious mistake of all. Where advice is sought upon this matter more or less suspicion attends the case. The youth with an inspiration for gardening is, willy nilly, an embryo gardeuer. Nature herself has saved anxious parents all trouble in worrying about what to do with their boy.

As it is, all sorts and conditions of boys are recruiting for the garden; and, as it is, the matter must be dealt with. Parents may be to blame, boys may not be blameless, but circumstances which perhaps neither can control are the biggest sinners of all. It is the writer’s earnest desire to help all to see and to feel such things as might otherwise pass their understanding, and consequently keep them as drones in the human hive. Some youths that have been thus pressed into the service now occupy high positions in the gardening world, and there is no reason why others should not do the same. Absence of past passion is no hindrance to future love. The lad whose love for gardening is an inspiration is, of course, the boy after one’s own heart; yet in his inexperience are openings for advice, for good performance does not always follow on great promise; “Temptation hath a music for all years,” and he in falling from his high estate may lose his birthright in the bog of blighted hopes. Comparisons have necessarily been drawn, henceforth recruits of all sections will please “fall in” together.

Attention! Eyes right—on your work. Anyone looking back now had better “fall out” and don the scarlet coat, the navy blue or whatever colour or career he has a lingering regard for. None? All going in for gardening; then may you all come out gardeners in the fullest sense of the term. Orders of the day are make the most of your time. At a rough estimate the drilling process occupies about ten years. It is a long time to look forward to, but an exceedingly short time to look back upon. To reconcile the optimistic eyes of youth with the pessimistic spectacles of age we may add these periods together, divide the sum by two, and the balance of time struck is truly little enough for the great work in hand. All work needs recreation. In this recreation lays many, if not most, of the secrets of success. This will be explained in due course. In the first place the importance of uniting body and soul in work cannot be overestimated or too strongly impressed. (A body without a soul is like a flower without scent). You do not see how they can be separated, but it is easily accomplished and frequently happens. Our stokehole boy is a good illustration; there he is, in the stokehole, so far as his body is concerned, but his soul loveth cricket, and that it is away at the cricket is very palpably evident by the way in which he holds the fireshovel at “cut to leg,” playing imaginary balls, and very probably, though it is said very reluctantly, he will have to make a run elsewhere, and take his innings on fresh fields and pastures new.

The soul must go into the work—“He who follows two hares will be sure to catch neither”—even to the meanest work a boy is put at, or it will amount to mere drudgery, and the performer will be a drudge. In reality there is no mean work that is done for a useful or necessary purpose. The boy who sweeps the boiler flues, stokes the fire, or scrubs out the houses in the very best possible manner, is doing as much in his way as any of our great generals at the front are doing in their way. Like most campaigns, there is much hard fighting to be done, and the moral effects dependent upon the earlier battles of life are many and far reaching. “Peace hath her victories no less renowned than war.” The most daring thing is often that of daring to do right, and to do that at the right time is to double its value. There may, in some instances, be no disgrace in defeat, but there is always the danger of being made a prisoner—for life.

“Free, yet in fetters held till his last breath;
Gyves that no smith can weld, nor rust devour.”

There is a host of bores, and particularly crafty ones, to overcome; but they can and will be overcome if our young warrior wills it. During working hours they love not the master’s eye, but spring up in all directions behind his back, and the bothy breeds them as fast and plentifully as the old fashioned bothy used to breed blackbeetles. As previously shown, the favourite form of recreation seems consciously or unconsciously to permeate our work; how necessary it is, then, that it should be made subservient to it! Manual labour demands, or should do, mental recreation, consequently nothing could fit better into a recruit’s training. It is a paradox,

however, peculiarly British that much of this so-called recreation is characterised by an exhibition of physical force. Some say they find hard work easier than study. They get terribly bored at the start, and of all the bores that lurk in the body this is the biggest bore of the lot. Many a lad contemplates with almost horror the idea of placing himself under restraint during his hours of absolute freedom. He knows that he should do so, for young gardeners are far from being deficient in common sense. But these bores are for ever showing a flag of truce, so they are temporised with. Something or other prompts putting off the settlement to a more convenient season, when a grand attack will be made with all the artillery of splendid designs and elaborate plans. It is magnificent, but it is not war. Fight 'em at once, boys; and fight 'em to a finish. You don't exactly know how to begin. To show you how to begin and how to finish will be both a pleasure and a privilege to—
THE OLD BRIGADIER.

(To be continued.)



FRUIT FORCING.

Vines.—*Early House.*—The Vines in flower should have a temperature of 60° to 65° at night and 70° to 75° by day, but Muscats require 5° more both day and night. A somewhat drier atmosphere, secured by freer ventilation rather than withholding moisture, favours the development of the organs of fructification. Care, however, must be exercised in ventilating during severe and sharp weather, avoiding an inrush of cold air, which chills and stagnates the growths, producing rust in the berries and crumpled foliage. A genial atmosphere must be insured by keeping the floors sprinkled two or three times a day in bright weather, but occasionally only in dull periods. Stop the laterals below the fruit at the first leaf, and keep those stopped to one joint throughout the season, but those above the bunch may be allowed to make two or more joints, provided there is space for the full exposure of the foliage to light and air.

Vines Started at the New Year.—The Vines are in leaf and showing the fruit at the points of the shoots. Do not hasten disbudding, but perform the operation gradually, removing the weak and least promising growths in the first instance, then give further attention when it is seen which shoots are likely to give the best bunches. One cluster on a spur is as much as is likely to finish satisfactorily, but judgment must be exercised. When the spurs are widely distant along the rods two shoots may be left on each spur, but only one must be allowed to bear fruit. Weak Vines may be allowed more space so as to secure stouter wood, larger and plumper buds, and better bunches in the following season. When the growths are advanced about two or three joints beyond the bunches their points may be pinched off, this being effected when the leaves at the stopping joint are about the size of a shilling. Give the needful protection to outside borders, keeping the soil from becoming frozen.

Vines to Afford Ripe Grape in July and August.—The Vines must now be started, and as they break more evenly and strongly when assured a moist genial atmosphere, damp the rods two or three times a day in bright weather, and sprinkle other surfaces. Occasional damping only will be necessary in dull weather. A temperature of 50° at night, 55° by day, and 65° from sun heat is suitable until the buds begin to move. Bring the inside border into a thoroughly moist state, but not saturated condition, by repeated waterings with tepid water, and if the Vines are weak and the soil open afford a supply of liquid manure after it is watered sufficiently for healthy growth. The soil will then retain most of the manurial elements, and they will pass into an assimilable form, or such as is available for taking in by the roots, and will accelerate root activity as well as supply nourishment. The outside borders should have sufficient protection to prevent chill.

Late Houses.—The Vines being cleared of the Grapes early in January, then pruned, dressed, and the structures thoroughly cleansed, afterwards removing the loose surface soil, and supplying a top-dressing of fresh loam with an admixture of fertilising ingredients, they will be ready for starting whenever desired. The varieties taking a long time to grow and mature perfectly must be started in good time, so as to give them the benefit of the summer for developing and maturing their crops. A start should be made without much further delay, as it is essential to the perfecting of the Grapes, especially those subjected to the highest cultivation, that the Vines be started so as to have the crop perfectly finished by the middle of September. Strong rods should be brought into a horizontal position or lower, and a good break secured by maintaining a genial condition of the atmosphere, and syringing the Vines occasionally in dull, or two or three times a day in bright weather. A temperature of 50° to 55° at night and on dull days, with 10° advance from sun heat, will be sufficient until the buds break, then allow 5° to 10° more by day, husbanding the sun heat by early closing, but losing no opportunity of ventilating freely in the

early part of the day, so as to insure sturdy growth and well-developed stout foliage.

Ripe Grapes.—Avoid fire heat as much as possible in the Grape room; but the cold weather necessitates recourse to constant firing, and moisture is apt to be drawn out and deposited on the cooler surfaces of the Grapes. This sometimes results in "spot," both with and without fungal growth, for it is certain that without the moisture the fungoid germ could not develop, and their germinal tubes not enter the tissue of the Grapes until the cuticles were weakened, if not actually ruptured, by the contact and continued presence of the moisture. A little air will prevent such accumulations of water on the berries, and the Grapes will not shrivel unless the evaporation be excessive and the temperature high. An equable temperature of about 45° is most suitable, and the less light the Grapes receive the longer will they retain their colour. As the water in the bottles diminishes it should be replenished with clear soft water, taking care to avoid spilling any or allowing drops to fall on the Grapes.



DYSENTERY.

SHOWERS of sleet and snow have been of frequent occurrence for some weeks, and although not much frost has been registered, the temperature has been low. This has had the effect of confining the bees to their hives. The first fine day after a period of inactivity will cause the bees to leave the hives in great numbers, and should the weather suddenly become dull and cold many will become chilled and will be unable to return to their hive. A cleansing flight at this season is necessary for the welfare of the bees. Bee-keepers recognise this fact when they observe the faecal matter which will be much in evidence on the outside of the hives, or wherever the bees alight.

It must not be taken for granted that the bees are suffering from dysentery when these spots are first seen. If it is of a pale yellow or chocolate colour it is the ordinary excrement, and if they have not taken a flight for several weeks will usually have a disagreeable smell. If the weather is favourable and the bees are healthy the majority of them will return to their hive.

If a stock is affected with dysentery it is much more serious. Fortunately this disease is easily detected by a close observer. The matter voided by the bees will be found to be much darker in colour; in fact in bad cases it will be nearly black. The bees from a diseased colony will be unable to fly many yards from their hive, while the floorboard and everything within a few yards of the hive will be discoloured with the unpleasant smelling excrement. If the combs are examined they will also be found in the same condition. This is never observed in a healthy stock. The bees, too, will be reduced in numbers, many of them being swollen, and only having sufficient strength to crawl to the alighting board; or if they take wing they are not able to fly more than a few yards, and rapidly become chilled on the cold surroundings.

Bees observed in this condition are supposed by some bee-keepers to be suffering from a distinct disease known as dropsy. After, however, carefully examining many stocks thus affected, we have no hesitation in pronouncing it dysentery. Owing to various causes this disease has been more prevalent since the advent of the modern frame hive than it was when the majority of the bees in this country were kept in the homely straw skep.

CAUSES OF DYSENTERY.

There are several causes of the disease. Feeding stocks late in the autumn, so that the bees have not time to seal their stores, is one of the most frequent. For this reason we always advise bee-keepers to feed their stocks for winter as soon as the honey harvest is over, as it is then sealed at a rapid rate when the temperature is high. We cannot do better than imitate the bees in this important matter. If they are left to themselves, and are not robbed of their stores, the honey is sealed over as soon as it is in proper condition. This takes place during the long days of summer, and will account for the bees being less affected with this disease in straw skeps, as the stocks intended for wintering purposes usually had all their natural stores left in the hive.

Dysentery may also be caused by keeping the bees in a damp, cold hive, where they cannot be expected to do well. Our attention was called to a hive of this description not many weeks ago. The first fine day afterwards we carefully removed the bees and combs that were not mouldy into a dry hive, a cake of candy being placed directly over the cluster. Extra coverings were also used, with every prospect of the bees doing well in the future. Warm weather will work wonders with a colony if it is not too much reduced in numbers. A dry hive, warmth, and good food will do the rest. Prevention, however, is better than a cure.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea.—*Seeds*.
 H. J. Jones, Lewisham.—*Seeds and Plants*.
 Louis Van Houtte, père, Ghent.—*Plants and Seeds*.
 L'Horticole Coloniale, Parc Leopold, Brussels.—*Plants*.
 H. Merryweather, Southwell.—*Seeds*.
 W. Paul & Son, Waltham Cross.—*Seeds*.
 Pinehurst Nurseries, Pinehurst, N.C., U.S.A.—*Wholesale Seeds and North Carolina Plants*.
 J. Russell, Richmond, Surrey.—*Seeds*.
 W. Sydenham, Tamworth.—*Pansies and Violas*.
 F. Vallis & Son, Chippenham.—*Chrysanthemums*.
 T. S. Ware, Ltd., Tottenham.—*Seeds*.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Employment in Australia (*G. C., jun.*).—Your best course will be to procure the "Horticultural Directory" from these offices, price 1s. 3d., post free, and write to the several Australian nurserymen named therein. They would certainly reply to you if they were in want of an assistant with a knowledge of the English trade.

Evergreen Creeper for a High Wall with an East Aspect (*W. G.*).—The best of all evergreen climbers for quickly clothing a wall, especially one 30 feet in height and somewhat sheltered by trees, is the common large-leaved Irish Ivy, *Hedera helix canariensis*. Plants in pots are the most satisfactory, as they travel and plant quite safely even when 6 feet in height or more.

Lime and Manure for Tomatoes Under Glass (*A. Z.*).—The lime and manure recommended to "R. F." for Tomatoes, in our issue of February 1st, answers well for cultivation under glass. Salt is named in relation to lime, and we wish you to observe that the lime ought to be applied and dug in some time in advance of using the salt, but the salt left on the surface. It is not generally advisable to use salt and lime at the same time, but we advise kainit instead of salt, and so escape chloride formation.

Treatment of Asparagus (*Idem*).—It is a well-known fact that cutting is a weakening process. We have noticed that young Asparagus plants push two growths in a season—the first relatively weak, and another, about midsummer or soon after, comparatively strong; and these monopolise the vigour, and form correspondingly fine heads for developing the following season. It is a good practice, therefore, to allow the weak grass to grow to the end of cutting time, say June 20th, and then cut away, leaving the stronger only to each rootstock. Some growers cut off the very small shoots after they have developed, and thus cause a second growth to be made earlier, and at the end of the cutting season pull out any small shoots, leaving only the strong to grow. The coat of stable manure early in spring and the two dressings of salt, about $\frac{1}{2}$ lb. per square yard, will be excellent. A considerable advantage may be derived from the use of Peruvian guano, about 2 ozs. per square yard applied early in April, and repeated in about six weeks, taking care not to use it over the heads, but between the rows and plants.

Lilium giganteum (*Tyro*).—Let the pots be twice the diameter of the bulbs, the soil half turfy loam, the remainder equal parts of peat, leaf mould, and decayed manure rubbed through a sieve, adding a handful or two of sand, all to be well mixed; embed the bulbs in sand, and first cover with soil 2 inches below the rim of the pot. Bury the pots in cocoa-nut fibre refuse or ashes in a cold frame or other cool place. The plants will grow in frames, light greenhouses, or outdoors in summer.

Improving a Lawn (*C. H. G.*).—In dry weather towards the end of March scratch up the lawn, breaking the surface soil with a sharp-pointed iron-toothed rake. This must be carried out when it can be done best, not when the ground is baked hard; still it must be somewhat dry. If you can further spread on some sifted soil that you may in the meantime collect for filling up inequalities, so much the better. Then sow freely some renovating lawn seeds, sprinkling a little soil over them if you have any; if not, work them in as well as you can with a rake, and draw a roller over the surface or beat it down with a spade. If birds do not eat the seeds, and they may be prevented by stringing cotton a few inches above the surface, you will soon have a green lawn, and it may be kept so by judiciously mowing, not cutting too closely the first three times, or several of the young Grasses may be destroyed. Bonemeal and the advertised manures are good for lawns, applied at the rate of an ounce or two to the square yard in showery weather.

White Worms in Poultry Manure (*Puzzled*).—The minute white worms are certainly not wireworms, at least we have never found them in poultry manure, but are members of the same order as the earthworm, *Oligochaeta*. There is little doubt that they attack the roots and root stems of Clovers, Vegetable Marrows, and other plants. We have known them injurious to Currant bushes by destroying the tender rootlets; Apple trees on the same ground not being affected. We should not use the manure for fruit trees amongst which vegetables are grown until treated with lime or gypsum. Our plan with such stuff, for we have used poultry manure extensively in fruit and vegetable grounds, was first to disinfect it. 1, Spreading rather thinly and sprinkling on the manure air-slaked chalk lime, a foot thickness, having about an inch of lime placed on it, then the heap was turned two or three times and left for a day or two, always before violently heating spreading on the land and digging or pointing in. 2, Throw the manure into a heap, sprinkling, if dry, with a solution of sulphate of iron, 1 lb. in 10 gallons of water, and cover the heap with gypsum. Allow this to heat, and when quite hot turn inside to outside and top to bottom, again covering the heap with gypsum, and in about a week again turning and mixing, keeping after this so thinly as not to heat, or applying at once to the land.

Rose Gloire de Dijon (*F. F.*).—The appearance of the leaves suggests that the wood has not been so well matured as is desirable, and possibly the growths were overcrowded during the summer, still if the wood is strong enough and moderately firm, flowers will probably follow in due time. You must remember that no Rose can do what is expected of it if the growths are allowed to be infested with insects. Your greenhouse ought to have been fumigated long ago, and the Rose well and frequently syringed to keep it clean. If there is nothing to prevent fumigation fill the house with smoke from tobacco or good tobacco paper on two consecutive nights, then syringe the plant thoroughly with an insecticide. If fumigation cannot be done syringe forcibly and repeatedly. The advertised insecticides, if used according to the directions that accompany them, will answer the purpose for which they are prepared. If the stem outside the house has been exposed to the weather the plant may have sustained injury. We have many times stated that such stems should be protected with hay bands. Any that may be still exposed should be covered at once, as when growth starts under glass a sharp spring frost may stop the rising of the sap through the exposed stems outside the house.

Brown Spots on Clematis indivisa Leaves (*C. D., Kent*).—There were found mycelial hyphae in all the browned parts of the leaves, which, with some outgrowths from the younger blotches, indicate an attack by the rather uncommon Rose mould, *Peronospora sparsa*. It grows, as a delicate grey mould, on the under side of the leaves of Roses, in conservatories, but we have found it on a few woody plants under glass in addition to Roses, *Clematis indivisa* being one of them. The leaves become spotted with brown, and soon shrivel. This is due to the growth of fungal mycelium in the tissues of the leaf or leaves, which spreads from a centre of attack. Being wholly internal in its growth no outward dressing can do more than prevent the spores germinating or the disease from spreading. The endophytic nature of the parasite may account for "some mildew remedies" not having effect. We should try the preparations in powder of sulphate of copper, such as anti-blight, fostite, and strawsonite, applying lightly and occasionally by means of a bellows apparatus. As the leaves are smooth there is some difficulty in getting the powder to adhere, therefore many use the article in solution, applying with an atomiser or sprayer, merely coating the growths with the finest possible film. We found this, after removing all the affected parts and burning them, effective, air being given very freely and the atmosphere kept rather dry, for the fungus thrives best in a close moist atmosphere, and on rampant, succulent growths, the drier conditions tending to render the plant more resistant.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. B. A.).—1, *Asplenium pubescens*; 2, *Onychium japonicum*; 3, *Polystichum angulare proliferum*; 4, *Scolopendrium vulgare cristatum*; 5, *Cyrtomium falcatum*. (S. S.).—1, *Thuiopsis dolabrata*; 2, *Berberis Darwini*; 3, *Garrya elliptica*. (W. M. W.).—1, *Zygopetalum Mackayi*; 2, *Justicia speciosa*; 3, *Eucalyptus globulus*; 4, *Cupressus macrocarpa*; 5, *C. Lawsoniana*; 6, *C. L. erecta viridis*.

COVENT GARDEN MARKET.—FEBRUARY 7TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3 0	to 7 0	Lemons, case	4 0	to 15 0
„ Canadian, barrel ...	10 0	15 0	Melons each	0 6	1 6
„ Nova Scotian, barrel	10 0	17 0	Oranges, per case ...	5 0	15 0
Cobnuts per 100 lb....	60 0	70 0	„ Tangierine, box...	0 6	1 9
Grapes, black	1 6	4 0	Pears, Californian, case...	6 0	9 0
„ Muscat... ..	2 0	5 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	6 0	to 0 0	Herbs, bunch	0 2	to 0 0
Asparagus, green, bundle	5 0	5 9	Leeks, bunch	0 3	0 0
„ giant, bundle	15 0	20 0	Lettuce, doz.	1 6	2 0
Beans, Jersey, per lb. ...	2 0	2 6	Mushrooms, lb....	0 6	0 9
„ French Kidney, lb.	1 6	0 0	Mustard and Cress, punnet	0 2	0 0
„ Madeira, basket ...	2 0	2 6	Onions, bag, about 1 cwt.	4 0	4 6
Beet, Red, doz.	0 6	0 0	Parsley, doz. bunches ...	2 0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve...	1 6	2 0	Potatoes, cwt.	2 0	5 0
Cabbages, per tally ...	7 0	0 0	„ Teneriffe, cwt....	18 0	28 0
Carrots, per doz.	2 0	3 0	Seakale, doz. baskets ...	12 0	15 0
Cauliflowers, doz.	2 0	3 0	Shallots, lb.	0 3	0 0
Celery, per bundle	1 0	1 9	Spinach, per bushel...	3 0	5 0
Cucumbers, doz.	4 0	8 0	Tomatoes, per doz. lbs. ...	6 0	8 0
Endive, doz.	2 6	0 0	Turnips, bunch... ..	0 3	6 4

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 6	to 5 0	Maidenbair Fern, doz. bnch	8 0	to 10 0
Arums	4 0	6 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch...	2 0	2 6	„ Yellow, doz. bnchs.	4 0	6 0
Bouvardia, bunch	0 6	0 9	Mimosa, per bunch ...	1 6	2 0
Carnations, 12 blooms ...	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Cattleyas, per doz.	12 0	24 0	Narcissus, white, doz. bun.	2 6	3 6
Christmas Roses, doz. ...	1 0	2 0	„ Yellow, doz. bunches	3 0	5 0
Chrysanthemums, white			„ double, doz. bunches	2 6	4 6
doz. blooms	6 0	9 0	Odontoglossums	5 0	7 6
„ yellow doz. blooms	5 0	8 0	Pelargoniums, doz. bnchs	8 0	12 0
„ bunches, var., each	1 6	3 0	Poinsettias, doz.	12 0	18 0
Daffodils, double, doz. bnch	8 0	10 0	Roses (indoor), doz....	6 0	8 0
„ single, doz. bnch.	6 0	12 0	„ Red, doz.	6 0	8 0
Eucharis, doz.	8 0	10 0	„ Safrano, packet ...	3 6	4 0
Gardenias, doz.	6 0	8 0	„ Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	5 0	7 6
bnchs.	6 0	9 0	„ Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	6 0	8 0	Smilax, bunch	5 0	7 6
Lilium Harrisii, 12 blooms	4 0	8 0	Tulips, scarlet, bunch....	0 6	0 8
„ lancifolium album ...	3 6	4 6	„ yellow, bunch	1 0	1 6
„ „ rubrum...	3 6	4 6	„ bronze, bunch	1 0	1 6
„ longiflorum, 12 blooms	8 0	10 0	Violets, Parma, bunch ...	4 0	6 0
Lilac, white, bundle ...	4 0	6 0	„ dark, French, doz.	2 6	3 6
„ mauve, bundle	4 0	8 0	„ „ English, doz.	2 0	3 0
Lily of the Valley, 12 bun.	9 0	18 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, small, 100	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each ...	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 6	2 6
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Dutch, doz....	10 0	18 0
Crotons, doz.	18 0	30 0	Hyacinths, Roman, per pot.	0 8	1 0
Cyclamen, doz.	8 0	12 0	Lycopodiums, doz.	3 0	6 0
Daffodils, pot	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz....	12 0	30 0	Mignonette, doz.	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Poinsettias, per doz. ...	15 0	20 0
Ferns, var., doz.	4 0	18 0	Solanums per doz.	9 0	18 0



BASIC SLAG.

OWING to the drop in the price of grain—a drop which makes that grain-growing a most unprofitable and heartbreaking process—and owing also to the fact that the question of labour is a burning one, there is naturally a tendency to lay down more ground as permanent pasture. Some of the land is well adapted for this plan, and given a really good selection of proper seeds in a few years the result is satisfactory.

In taking a railway journey or a bicycling tour of any length, how many different kinds of pasture we come across, and we are not the first, nor shall we be the last, who have noted with sorrow the indifferent management of a great part of that grass land. Of course, we are well aware there are acres upon acres of splendid grass which practically “manages” itself, and it would take a wonderful concatenation of adverse circumstances to spoil it. We remember in the seventies seeing park grass in Northumberland which let for £7 per acre. We never quite saw how that rent was afforded: but it was given, and the north country farmer is not a baby. But enough of this super-excellent pasture; what of the great middle class and the moderate? We all admit there is room for improvement there. True, you can never make silk purses out of sow's ears, but you might make a good leather wallet.

The first essential point is to find out what is lacking in the constituency of the soil. There may be various valuable ingredients lying dormant, and they want just the right sort of fillip to put them into full working activity. Sometimes exchange of stock will prove beneficial; sometimes lack of drainage is the great need. All sorts of applied fertilisers mean an outlay in hard cash, and generally in the economy of a farm it is only the arable crops that get a dressing; this because they show the immediate benefit, and also as there is an idea that the improvement by stock suffices for pasture.

Of late years a new material has come much into vogue—it is the outcome of modern science—a waste product of a great manufacture and a waste product of great value. We refer, of course, to basic slag. Anyone who reads the agricultural papers will have seen the discussions for and against this manurial agent. Like all new things it finds enthusiastic partisans and emphatic detractors. Some people go red hot into any new scheme, and therefore generally burn their fingers. Others hasten slowly, and it is their opinions that ought to carry weight. We find every season there are fresh adherents, and these among men who know what they are about.

We were glad to read in the Royal Agricultural Society's Journal a most favourable report of the basic slag that had been submitted to analysis. Dr. Voelcker says for the year ending December, 1899:—“Basic slag has undoubtedly been used more generally and often to much advantage, more especially on poor heavy land pasture. When first introduced as a manurial article, the greater part of the basic slag produced in this country was sent abroad, but I am informed that quite two-thirds of the out-turn is used here. At the same time there has been a steady improvement both as regards the quality of the material supplied, *i.e.*, its richness in phosphoric acid, and also in respect of the fineness of grinding, a most material point which should never be overlooked. From time to time I have felt it right to alter the terms of our recommendations to purchasers of basic slag, each time in an upward direction; and while 14 or 15 per cent. of phosphoric acid and a fineness of 70 per cent. were not long ago all that could be demanded, a good quality sample will now give 17 per cent. or over of phosphoric acid and a fineness of 80 per cent.”

This seems to us a good testimony as to the character of the article to be purchased. Now a little as to its use. First, what does basic slag contain?—phosphate and lime, both unrivalled as dressings for

grass land. But you say we want potash and nitrogen as well. Wait a bit. We spoke earlier of dormant forces in the land which want very little persuasion to become active. It is always well to use the material that is at home. "Far sought, dear bought." Basic slag has this wonderful rousing power—it liberates the natural potash if present in the soil, and also breaks up humus, releasing the nitrogen, thus making them gratuitous but valuable elements of fertility assimilable by the plant roots, so that basic slag may be applied with great benefit as long as the natural store of potash and humus holds out.

If the soil should not contain nitrogen and potash it is well to apply them in addition to the slag, bringing up the whole of the manurial value to 20s. or 30s. per acre. This has been found to be more effectual than double the value of farm manure. Here is the testimony of a farmer: "I have an 18-acre field of seeds that had 5 cwts. per acre of basic slag in October 1897-1898. It was grazed the first year, mown this year, and is now full of Clover, and kept green and fresh all through the hot weather; it is being grazed now (November) and will do to graze another year. As soon as it is clear of stock it will again be dressed with 5 cwts. per acre."

This is creditable for the last hot, dry summer, when fresh herbage was hard to find. Not only is the quantity of the grass increased, but there is a wonderful difference in its feeding value. The cost of this fertiliser is about 42s. per ton, in some cases rather less, and as the quantity used is generally about 5 cwts. per acre, the expense is not heavy. Experiments are being carried out to decide whether healthy roots could not be produced as well as good grass by the use of this tillage.

Of course the best time for application to grass land is *now*, when the winter rains have a chance of washing the fine powder into the soil. The finer the powder the better. A still calm day should be chosen, and it would be of course the best plan to drill it on the land, previously watering it. The slag, good as it is for the land, is most injurious to human beings, and all risk must be minimised as much as possible. The men should be instructed to guard nostrils and mouth with folds of muslin. This must be insisted on. This is a case like many others where precautions are necessary, but with well wetted slag and the exercise of common sense, no danger need be apprehended.

We begin to see there is really nothing "waste" in the whole scheme of creation. Was it not Lord Palmerston who defined "dirt as matter in the wrong place?" We are gradually using up all bye products of our manufactures. We have been, and still shall be, a long time in learning all these things. The last twenty years we have made vast strides. We have had many youthful theories upset, and many new doctrines put in their place. This is essentially the age of the practical chemist, who, by patient perseverance, is wresting from Nature her deeply hidden secrets.

WORK ON THE HOME FARM.

The lambing season has now commenced, and we see in many places newly made folds and pens ready for use, if not already occupied. The greater profit gained by early lambing and the sale of fat lambs has induced many farmers to put forward the lambing season by a month. There is more labour and trouble, also a little more expense in extra food, during the spring; but early sale of lambs and gradual relaxing of the strain upon pastures and cake supply soon make full compensation. So far the ewes are healthy, but it is early to boast.

The weather is mild, and still very wet; much flood water and snow remain visible, and there is not much land in the country dry enough for the reception of seed grain. Early sowing, as we have lately remarked, is advisable, but the work must be done under suitable conditions. Barley is especially fastidious as to a proper seed bed, and we had better wait for March winds than muddle the seed in. Though the land is too wet for working fallows, there is plenty for the horses to do. Sheep are marching rapidly over the Turnips, and the folds have to be ploughed as soon as they are vacated. Seed fields that have been reserved for the Oat crop must also be ploughed without further delay. Such fields have been very useful for the ewes, but must now be spared if a good corn crop is to result. The land would have been better ploughed before Christmas, but the bit of pasturage was tempting.

Land that was ploughed deeply for Potatoes about Martinmas must be worked down at the first opportunity, and then ridged up for planting. Even if it is a little wet it would be better in the ridged state, as it will dry more quickly, and also be more open to frost, besides which there is the gain in having got one piece of work done. Fat beasts and sheep are selling well, especially the former, but butchers complain that they kill very badly, and are short of suet; they blame the absence of good Swedes, and are no doubt right. We fancy that decorticated cotton cake in moderate quantity added to the other artificials would assist good feeding, but yardmen do not like its hardness.

THE IMPROVEMENT OF LAND ACT.—The Board of Agriculture desire to call attention to the provisions of the Improvement of Land Act, 1899, which came into operation on 1st January, 1900. This Act has been passed with a view to give increased facilities to owners of land desirous of carrying out agricultural and other improvements with the aid of borrowed money. With this object the new statute amends the Improvement of Land Act, 1864, and other Acts authorising the creation of rent-charges for the improvement of land. Under the new Act one of the provisions provides that the maximum period over which rent-charges authorised after the commencement of the Act may be allowed to extend is forty years. It must not, however, be assumed that the full term will always be applicable. By another provision, the land charged with the payment of the rent-charge may be land other than that which is directly improved, provided (a) that such other land is shown to the satisfaction of the Board, by statutory declaration, to be held for the same estates or interests, and to be either subject to the same encumbrances (if any) or to be free from encumbrances; and (b) that, in the opinion of the Board, such other land may properly be included in the charge.—("North British Agriculturist.")

FARMERS AND STOCK-KEEPING—EXAMPLES OF WHAT MAY COME HIS WAY.—A fortnight ago we were discussing the question of farmers and showing, and I heard a story a few days ago showing that ignorance in the quality of the stock reared may be a source of loss. This spring a fancier sent off a setting of eggs for 4s. 6d. to a certain farmer. He was asked in the autumn for a cockerel or two more than he could supply. He remembered the farmer to whom he had sold the eggs, and went over to see if there were any good birds amongst them. The farmer's wife informed him that all the cockerels had been sent off to the market the week before—all except one which escaped. This one was packed off, as I understand, without the fancier seeing it. It was sold for 4s. 6d., and eventually it took the cup at the Palace in a certain class. I also heard of a farmer who had a nice lot of pure-bred birds, and a fancier called in and offered £5 for his pick. The offer was accepted, and the bird chosen brought in a fortune to the fancier. I would not suggest that £5 notes lie hidden beneath every pure-bred bird; but certainly, if farmers go in for any particular breed they might as well, to say the least of it, know the special points of the breeds they go in for, even though they have no intention of exhibiting. It would be interesting to know exactly what it costs a farmer with plenty of land to rear chickens up to six months old, and what arrangement would be considered a paying one for him to make to bring up chickens after they have left the hen or the foster mother.—("Farmer and Stock-breeder.")

SOUTH AFRICAN HORSE SICKNESS.—Much more to be dreaded than glanders is the "sickness" which about this time of the year, usually a little later, breaks out over a large portion of South Africa. British veterinary officers have patiently investigated the disease years and years ago, and Mr. Hutcheon and other veterinarians in the service of the Cape Government have continued their researches without ascertaining the cause. It is most rapid and fatal, and it is to be hoped we shall soon hear of weekly consignments of a thousand or two of Australian horses at the least, to take the place of those which will inevitably die. From my own experience, I should expect quite half the number to succumb before the conclusion of peace. I also anticipate a steady and continuous rise in the price of horses in that country, and would point to the fact that they cannot be quickly replaced, and therefore as many good mares should be stinted this spring as each owner can arrange for. The horse sickness has all the appearance of poisoning, so rapid is it in its effects. An animal which, to all appearance, was well overnight, is found next morning blowing like a case of congestion of the lungs: heaving flanks, distended nostrils, great distress and collapse, death following before sundown in most instances. The few which live remain immune for life, and are much valued as "salted" animals. Some seem insusceptible to the disease or less so than others, otherwise the continent would be clear of horses altogether. No medicines appear to have any good effect, but a serum has been employed which is thought to give a certain amount of immunity. It is probable that the horse sickness, like the malarial fever of man, is due to the bite of some poisonous insect. To change the fauna of a country is too much to hope of any government, and while the mosquito infects men, and some as yet unidentified creature poisons horses we can only hope (says a writer in "The Farmer and Stock-breeder"), to blunder upon some prophylactic in the astounding manner of our forefathers, who discovered specifics for certain diseases whose causes they had not ascertained.

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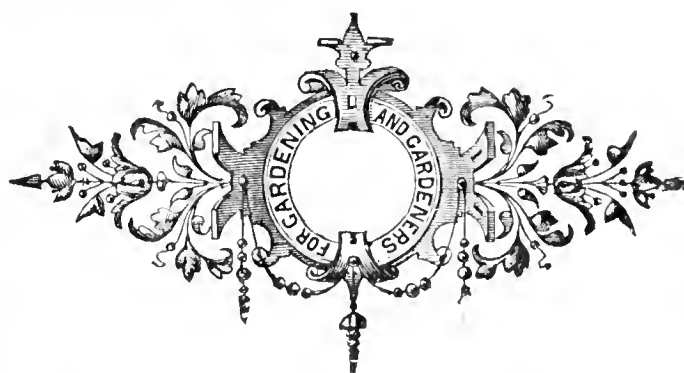
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TURNING MOVEMENTS.

AS we press onward in our various spheres, each striving with might and main to carve out of the rugged road of life a course which will lead us to some envied goal, most of us, I trow, often spend a few moments in surveying the world's great stage, and noting the ever changing tactics of the players. The battle of life should then be as an "open book," in which we may read that which is spread out before us, but can only hazard a conjecture as to what is to follow.

To all who thus periodically take their bearings one fact must, I think, stand out clearly—viz., the restless activity which prevails in all quarters. Education, rapid means of communication, and the marvellous development of the Press, have so sharpened men's wits, that success in any walk of life can only be maintained by continually changing our methods, and adapting them to the needs of the hour. The individual, or nation, who tries to pursue a straight onward course, without grasping the significance of the changes which are continually taking place, must sooner or later meet with a severe check, which, fortunately to the stout-hearted, would only be the signal for reform—reform in bringing both our weapons and methods up to date. The pendulum of scientific discovery is continually on the swing; sometimes it gives to the aggressor the advantage, at others to the defender. The straight onward course in attack must then be put aside when facing the foe and strategy resorted to, in order to effect a "turning movement," and thus attack the enemy—or the difficulty—at the weakest point.

The noble and heroic efforts of Britain's sons in that far off land of boundless possibilities are watched to-day with breathless interest by millions in this sea-girt isle; not with fear and trembling, but with confidence in the energy, adaptability, as well as grand courage of our "empire's defenders." These same qualities are needed in every walk of life, and to those engaged in the peaceful art of gardening they are in a degree as necessary as to the dashing warrior, for the gardener assuredly has

enemies enough to fight—foes which need restless energy, scientific guidance, and undaunted will to overcome.

Let me now cite a few instances which bear out the correctness of the foregoing assertion. It seems an inevitable law of Nature that when the cultivation of any plant, fruit, or vegetable is suddenly taken up on a huge scale, that particular form of vegetation in a short time falls a prey to hosts of insect pests and diseases, even when the most approved methods of culture are pursued. Experience may teach us how to still further improve our methods, yet it seems impossible under some circumstances to successfully combat our enemies by relying on good culture alone. Take, for example, the fungoid diseases which play such havoc with Tomatoes. A splendid start is made early in the season, former errors are avoided, and unceasing attention given to the plants, yet with all the care, the watchfulness, the hard fighting, the dreaded enemy puts in an appearance just when prospects appear the brightest. Fight as we may then with old weapons, and on old lines, we can only win a doubtful victory. No amount of valour and tenacity will avail by attacking our foe in front; our reasoning powers must be used to outflank the enemy, to make an unexpected attack at a vulnerable point, and thus nip further development in the bud. In the gardener's war against Tomato diseases the general who directs the strategy is the pathologist, who by close study of parasitic fungi is able to tell us the exact time at which to combat the foe with the surest results, that time being before the fungus produces its myriads of spores, which spread disaster around. Now, by dressing the borders and spraying the plants with fungicides, we are able with ease and certainty to accomplish a task which has beaten some of the foremost cultivators when making a direct attack instead of a "turning movement" under the guidance of the scientist.

In other phases of their daily life gardeners throughout the length and breadth of the land have to constantly adapt their methods to altered circumstances, as changes are ever taking place in the requirements they have to supply, and that too in the face of reduced expenditure. The gardens must still be kept gay and trim, the wants of the mansion unfailingly supplied, while additional duties in connection with public functions are heaped upon them. When such matters are pressed to the front it is evident that success in all directions equal to that of former years cannot be achieved by following in the beaten track; new methods of management have to be thought out, the machine becomes more complicated, and needs a closer supervision of the guiding brain than in days of yore. Tasks which were formerly accomplished in an easy methodical manner have to be done by the aid of subtle manoeuvre, which brings the necessary force to a given point just at the required time. Such is work which needs concentration of thought and action, judgment, and wise discrimination, as well as the old qualities of quick execution, or tenacity of purpose.

Fortunate, too, were many gardeners of old who lived in times when the supply of capable men to fill responsible positions was not equal to the demand; changes could then be made without much misgiving as to the future. The man who contemplates such a change now must perforce exercise caution, sometimes even justifiable strategy, in order to improve, instead of retard, his prospects. Sound advice on this point at the present time is, Be satisfied with your present position till you see definite prospects of improving it.

Let us turn for a moment to the commerce of the world. What startling and carefully planned "turning movements" seem to have become necessary. The vast and rapidly increasing population of civilised countries find their very existence depends upon securing opportunities for expansion, and thus all forward and colonising movements are influenced to a great extent by the necessity for commercial advantages and developments, which things are as the breath of a living nation; but wherever justice and equality follow in the wake of expansion the world is the better. Turning to commerce as conducted at home, is it not a startling and amusing sign of the competition of the present time that free gifts have to be dangled as baits to secure customers? In the commerce of horticulture we have not

yet arrived at such a strait as this, but who can say how soon it may come? the thin end of the wedge is, I fancy, already inserted. This, however, is certain—viz., that the trade has to be conducted with a greater amount of "strategy" and with more gigantic "turning movements" than at any previous period.

We are indeed passing through stirring times, and it behoves us all sometimes to think calmly of matters connected with our calling; and our race, as each thinker who unearths a hidden truth, or awakens a slumbering sentiment, which will stir into activity the "Micawbers" of to-day—be they in the horticultural world, or the world at large—adds something, however small, to the credit of the craft he follows. The midnight hour has struck, the morn will soon be with us, when gardeners will sally forth to their daily task, to their endeavours to make the earth smile with beauty and plenty; and to millions throughout the empire at the first streak of dawn will come the stirring thought, "What news from the front?"—ONWARD.

PROPAGATING VINES FROM EYES.

IN many private gardens the propagation of Vine eyes is only carried out in a small way. Often a Vine or two is all that are needed, and while many will prefer purchasing from the nursery, others choose to grow their own, and some there are who have no alternative but to do so. It is no uncommon incident in an interchange of visits by gardeners to find a few young Vines occupying a corner here or there, without there being any apparent use or purpose for them, and if by chance passing notice is made to them an immediate offer is made of a portion of the stock, which outnumber their home requirements.

Except for the introduction of some new variety by inarching there are many gardens in which Vine propagation is quite uncalled for, because the houses are fully stocked with healthy rods. In mixed vineries, however, it sometimes happens that there are some which are not satisfactory in their growth and fruit bearing, and to move them from among others well rooted is not easy or desirable, because of the injury that would be inflicted to those remaining. Here, then, is a case where inarching of another variety may do good without an undue expenditure of labour or loss of time, and it is optional whether the Grape be a new or old variety, or whether it is home-grown or obtained from the nursery.

Whatever course is decided on it is necessary that immediate steps are taken, and in rooting one's own this must be anticipated earlier when pruning is done, and the laterals plunged in the ground outdoors until required. Shoots that are well ripened and free from pith ought to be chosen for the purpose, cutting these with a sharp knife in a slanting direction about an inch below the eye, and a shorter sloping cut above. Pots filled with suitable soil—loam broken fine, lime rubble, and some leaf mould—being ready, the eyes can be at once inserted. Before doing so, however, some silver sand should be so placed that in pressing the eye into the soil the sand forms a base for the cut portion to rest on; this is helpful to early rooting. For a few days they may stand in a newly started forcing house, but later they require bottom heat, either from a bed of fermenting materials or the usual propagating frame. Once growth has commenced it should be steadily maintained, and as there is seldom an equal state of growth in every bud a few extra eyes ought to be put in to allow of an ultimate selection of the best.

Care is necessary in watering that the soil is not kept too moist, as it soon sours, and the plants then make no progress. As soon as it is ascertained that they are rooting freely, a transfer to other pots and new soil makes a rapid change in the growing shoot, and from this period bottom heat can be dispensed with. A warm structure, however, is still requisite, and a light position where they get the full benefit of sunshine. When produced for the purpose of inarching on to older Vines this operation can be carried out while they are in a green state, the union is then more certain and quickly effected. The choice of suitable growing shoots or laterals at the base of the Vine will need to be made early in the season; with this provision, and sturdy, free-growing Vines, the trouble of uniting them is slight, and by the end of the season the young Vine would be firmly established, and can be severed below the point of union at pruning time. The pots should be regularly supplied with water as long as there is leaf activity, and the ligatures carefully loosened as the canes swell. —W. S.



CYPRIPEDIUM MRS. FRED HARDY.

C. MRS. FRED HARDY was exhibited by Messrs. F. Sander & Co., St. Albans, in the early part of 1895, when it was honoured by the Orchid Committee of the Royal Horticultural Society. It was obtained from a cross between *C. superbiens* and *C. bellatulum*, and traces of both parents are readily observable. The petals are very striking and of much substance, with purplish spots on an almost pure white ground. The lip is somewhat small, and is of a dull white flushed with rose colour, darkening towards the mouth. The dorsal sepal is white faintly tinged with green, and having rows of dark maroon spots.

LÆLIA HARPOPHYLLA.

A GOOD form of this plant flowering now is about as cheery and bright an object as can well be imagined, and though the individual flowers do not come up to *L. purpurata* and similar kinds for size, they are at least equally beautiful and useful. Slender growing and not particularly strong rooting, *L. harpophylla* does not need a large receptacle, but in a cool, intermediate temperature, with small pots or baskets, it thrives well. Severe drying in winter is not to be recommended, and care is needed to keep it clear of white scale.

DENDROBIUM SUBCLAUSUM.

Bright red *Dendrobiums* are not common, and on this account, *D. subclausum*, a rather small-flowered species, recently introduced by Messrs. Veitch & Sons, will be worth noting. Pushing a large number of smallish bulbs from a slender central one, it reminds one a little of *D. Falconeri*, but the resemblance ends with the habit, as the flowers are totally different, being small and tubular. Ample heat and a very moist atmosphere during the growing season suit it well, and the effect of a plant of it well flowered is very light and pretty.

EPIDENDRUMS.

The recent award of a first-class certificate to the hybrid *Epidendrum* figured on page 89 was probably a surprise to many. Not but that it richly deserved the honour, for it is a very beautiful plant, but the genus has long been under a cloud that as yet shows little signs of lifting, and it is to be hoped that this hybrid will be the forerunner of others. Respecting the genus as a whole it may be termed a New World congener of the Old World *Dendrobium*, and the similarity of the name is also to be noted.

Like *Dendrobium*, it contains a few plants that are little better than botanical curiosities, weeds of the great Orchid family, but it also contains some splendid garden plants. Take one of the parents of the hybrid referred to as an instance—viz., *E. Wallisi*. This is a very fine plant, and the only reason I can think of that it is not more grown, is that in the rush for new *Cattleyas* and *Lælio-Cattleyas*, *Odontogloss*, and *Cypripediums*, about all of which there is a great similarity, the more varied beauties of the *Epidendrums* have been overlooked.

Of quite a different class is the richly tinted *E. nemorale*, a plant well worth a place in all collections, and of course the orange and scarlet *E. vitellinum* is equally worthy. But this is not a neglected plant by any means; instead it is one of the most popular. *E. radicans*, again, gets a fair shade of attention, but not as much as it deserves.

Perhaps the most beautiful of all is *E. bicornutum*, with its white starry blossoms growing from the top of its pseudo-bulbs. The latter, hollow as a horn, have been found very difficult to keep up to size for any number of years, and though a few cases are on record of successful culture extending over a considerable period, the fact remains that it is a difficult species. An atmosphere well quickened by heat, always reeking with moisture, constantly changing, and never shaded, was what I was told years ago suited this plant.

After vainly trying to get it, I grew the plant in the lightest part of the East Indian house, and was fairly successful with it. It is an

Orchid that dislikes root disturbance, and the most lasting description of compost must on this account be allowed. Taken as a whole, there are few months in the year when a house devoted to *Epidendrums* was without flower, and to gather together and cultivate a representative collection would be very interesting.

COMPARETTIA FALCATA.

This is a very charming little Orchid, not often seen in creditable condition, for, like others of a similar habit, there is not much to come and go on, and the result of a severe check is to so paralyse the whole system of the plant that recovery is slow and doubtful. But newly imported pieces usually go on and flower for a year or two, and from these it is evident that the plant would become popular were it less fastidious. There are no doubt many places up and down the country where *C. falcata* has been grown and flowered for a considerable period, but they are few in comparison with the number of Orchid collections generally.

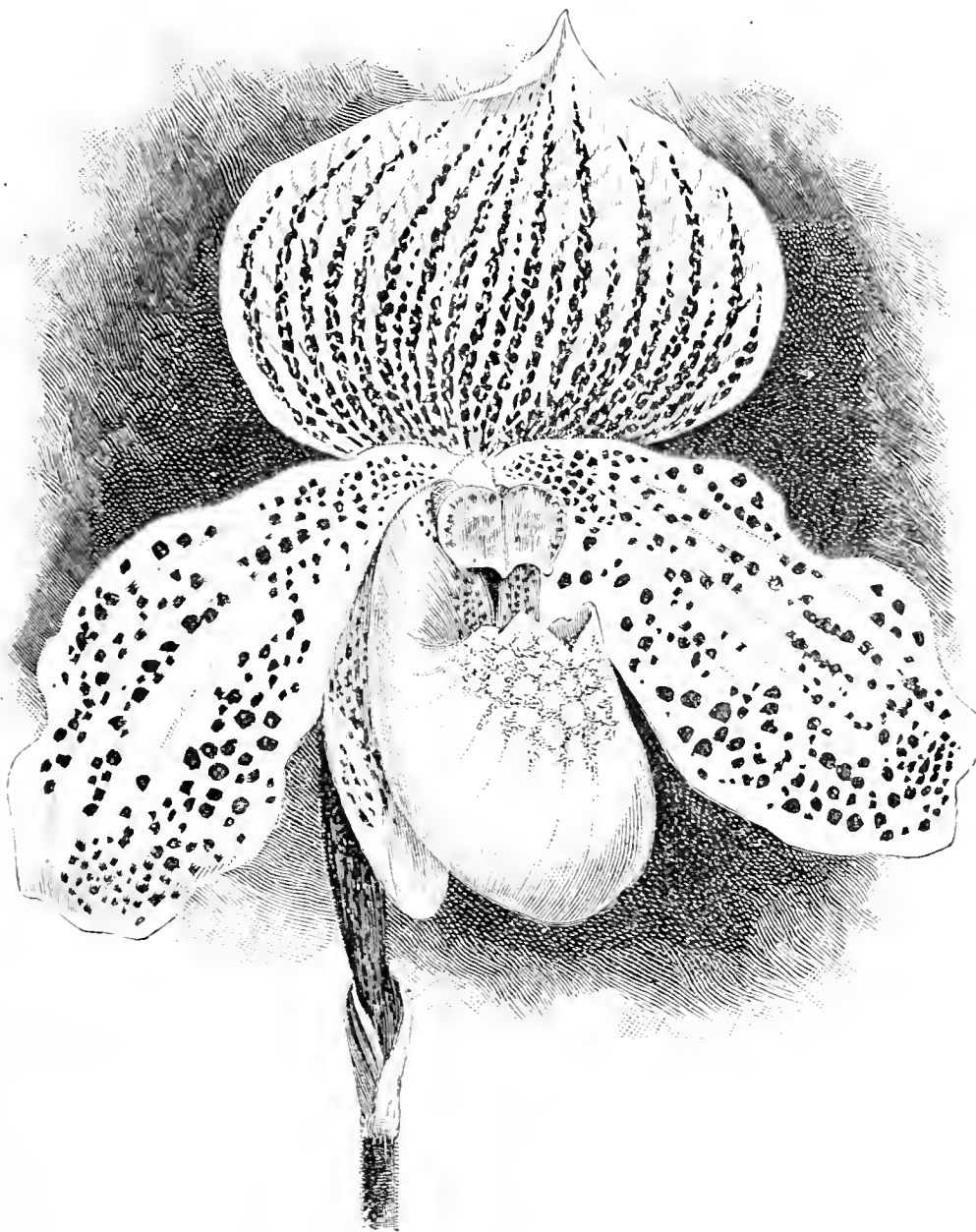


FIG. 33.—CYPRIPEDIUM MRS. FRED HARDY.

One such instance I know, and in this case the plants thrive well in a cool light fernery on a lattice stage over an open tank. Any receptacle that allows of perfect ventilation to the roots and does not hold a very large amount of compost will suit it well, and a very useful material is Tree Fern stem cut into short lengths. The flowers, purplish red in colour, are usually an inch or so across, borne about half a dozen together on pendant spikes. The plant is widely distributed in Guatemala, Cuba, and Ecuador, and possibly in other adjacent countries. It is an old species in gardens, having been figured in the "Botanical Register" in 1840.—H. R. R.

FRUIT STONES.—The stones of Peaches, Apricots, Nectarines, Plums, and Prunes, heretofore thrown away or used for fuel in California, are now articles of commerce, and realise from 8 dols. to 10 dols. a ton delivered in San Francisco. From the Apricot kernel French "nut candy" is made, displacing the Almond. Cinnamon, allspice, and nutmeg are adulterated with this same source, ground and highly prepared. Prussic acid and essence and oil of almonds are made from the Peach and Prune stones, and these flavours are used in a thousand different ways.



PRUNING MARÉCHAL NIEL.

REFERRING to the interesting article on Maréchal Niel by "H. S." on page 92 of our Journal, will the writer please say what became of the old shoots that were not pruned away but left to encourage the plants to make new growth? I suppose the "long clean rods" made were from the base and not from the old shoots left uncut; when were these old shoots removed or dealt with?—S. S.

MARÉCHAL NIEL.

I WAS interested in "H. S.'s" notes on this grand Rose in your issue for February 1st, as I have tried both plans of pruning. It seems to me we really want to take more consideration as to the main object when pruning Maréchal Niel. For example, if the house is devoted to that Rose alone, and the roof covered, I would certainly prune by cutting out weakly and old or partially worn-out wood; but when a number of other plants are to be grown, as is so frequently the case among amateurs, I believe in hard pruning as soon as the crop of flowers has been secured.

There seems to be no reason to assume that heat has any effect upon the colour of this beautiful yellow Rose. Under the same conditions, and even upon the same plant at the same time, I have frequently found great variations in colour. Nor have I noticed any permanent difference when upon any given stock. De la Grifferaie, Briar in all forms, various varieties of other Roses, such as Madame Berard and Gloire de Dijon, have all been used as stocks, without any appreciable fixture of the deep golden yellow that is so much more attractive than the paler forms.

POT ROSES.

These need considerable care and attention now, and if neglected the results cannot be satisfactory. Too much air or ventilation is more often than not the primary cause of check, flowerless growths, and mildew attacks. A steady and uniform temperature will bring on Roses much better and safer than a too rapid excitement. We get our crop of flowers earlier in this way. Hard forcing only exhausts the latent sap in the wood and roots before the latter can produce more, and the inevitable consequence is a severe check. After the roots are at work a rise of temperature will soon induce quick and unchecked growth. Insects are already troublesome, and will be most harmful unless we attack them at once. By no means use strong measures. There is no lack of good insecticides on the market, which must be used according to the advertised instructions.

A SELECT DOZEN FOR POTS.

Just at present cut Roses are a great help for indoor decoration, and are seldom more appreciated than during the time of Narcissus, Lily of the Valley, Roman Hyacinth, and other white flowers. The soft colours of the Teas and Noisettes, with their delicate perfumes, make them doubly welcome. But in order to have the best show of flower thus early in the season we must pay a little attention to the class of Rose grown. The following dozen cannot fail to please for pot work; and all force well, flower freely, are quite distinct, and open with freedom:—Niphetos, Perle des Jardins, Madame Lambard, G. Nabonnand, Isabella Sprunt, Catherine Mermet, Maman Cochet, Madame Falcot, Kaiserin Augusta Victoria, Papa Gontier, Gruss an Teplitz, and Sunrise.

PAUL NABONNAND.

A Rose that has come into our markets rather freely during this and last winter does not appear in many English catalogues. At the last annual meeting of the National Rose Society more than one member inquired its name, and some replied it was Red Safrano. One of our most prominent prizewinners among amateur growers was told the same, but he at once said it had no connection with Safrano. The proper name of this really charming Rose is Paul Nabonnand, one of the many grand decorative varieties sent out by Nabonnand (1878), and also one that has apparently been overlooked by most growers on this side of the Channel. Paul Nabonnand is a good grower, very free-blooming, carries the flowers boldly upon stiff and long stalks, lasts well, and is one of the best forcing Roses we have. Its colour is a very soft but quite clear rose, much deeper in the centre, and simply grand for cut work and in the bud stage.

MRS. ROBERT GARRETT.

Another Rose that growers must not miss is Mrs. Robert Garrett, a beautiful soft salmon pink form of Caroline Testout, and rather

better formed. It has been exceptionally good with me. There are several new Roses of last season that deserve mention, and I will endeavour to name a few of the best, giving a brief description, in an early issue.—PRACTICE.

CALADIUMS.

NOBLE foliage plants indeed are these, with such quaint markings and beautiful colouration of leafage, that when well grown they invariably command unstinted admiration. Yet notwithstanding all these good qualities, it is, I think, an undoubted fact that they are not so generally grown in gardens as they were twenty years ago. This is certainly not on account of the difficulty of their culture, as few plants are more easily grown, and many of the best varieties are specially suitable for decorative purposes. When arranged with other plants they add materially to the general effect on account of the distinctness of their leaves.

The miniature *C. argyrites* is well nigh indispensable for dotting in groups or furnishing the edges of jardinières and plant stands, and this silvery leaved Caladium is, I think, grown more largely than any other. Varieties of bolder growth are, however, to my mind quite as useful, as when placed in isolated vases or bowls they are particularly striking in appearance. For such purposes, however, they need to be well and sturdily grown, and also placed in an intermediate house for a few days, or they do not last well in dwelling rooms, but when properly treated they will, during summertime, remain in good condition in such positions as long as the majority of plants employed for decorative purposes, if we except such plants as Palms and Dracænas. Another point which should strongly recommend Caladiums to cultivators generally is that they do not take up valuable space in winter, and when such plants are grown they make room in the autumn for large stocks of those indispensable winter flowering plants, Poinsettias and Euphorbias.

The end of February or early in March is an excellent time to start a few tubers, following with the main batch a few weeks later. Shake away the old soil, and place each tuber in a small pot, using a light compost formed of turfy loam, peat, and leaf soil in equal proportions, with plenty of sharp sand added. If possible bottom heat should be given, and a night temperature ranging from 60° to 65°, with daily syringings, and the moist atmosphere maintained in stores generally. The tubers will soon start into growth, and when well rooted are ready for shifting into larger pots. Those from 5 to 7 inches in diameter are suitable sizes for plants intended for decorative purposes, but if large specimens are required, from six to eight tubers should be placed in a 10 or 12-inch pot. The soil for the final potting ought to be used in a rough state, so that the large quantities of water needed may pass freely through it, and to the ingredients already named a little dried cow manure, broken in pieces with the hand, or rubbed through a half-inch sieve, may be added. When using large pots fully one-third of their depth should be occupied by drainage, using rough potsherds for the lower layers, and finishing off with smaller ones, these to be covered with rough peat or fibrous loam.

After potting the plants should if possible be given a little bottom heat for a time; indeed, bottom heat is of great assistance in promoting clean, strong, healthy growths, quite up to the time that the plants are fully developed. Old houses are often well adapted for growing Caladiums, because in such lean-to structures there is often a central bed well furnished with pipes for supplying bottom heat. These beds are usually rather deep, having originally been used for Pine growing, and their surface is within 4 or 5 feet of the glass; here, then, is an ideal position for growing Caladiums. Plunge the pots about half their depth in cocoa-nut fibre, syringing two or three times daily during bright weather, and shade for a few hours; the plants will then make rapid growth, and in time develop highly coloured leaves. Heat and moisture are the great essentials to success throughout the growing season, but a dry hot atmosphere Caladiums detest, as it causes the leaves to go brown at the edges, and sometimes to flag badly. Very little air is needed even in summer time, with the exception of a week before the plants are required for exhibition or decorative purposes, but the moistening of floors and walls must be regularly attended to.

When rapid growth is being made, and the roots are active, copious supplies of water are needed; the soil ought never to be allowed to get quite dry, as the plants seem to revel in rough soil kept constantly moist, but when grown on an ordinary stage without

bottom heat more care is needed in watering. In early autumn when the foliage begins to turn yellow, water must be gradually withheld till the leaves die down completely, the pots can then be placed on their sides beneath the stage in a stove temperature. A few times during the winter the soil ought to be examined, and if very dry be

Dr. Lindley, Gaze de Paris, Mars, Mrs. Laing, Prince Albert Edward, Triomphe de l'Exposition, Regina Victoria, and Wighti. Some of the dwarf crimson forms are very beautiful, of which the illustration (fig. 34) is a typical example.

Those who intend to make a speciality of these attractive foliated



FIG. 34.—A GOOD TYPE OF CALADIUM.

watered, as if kept in a thoroughly parched state throughout the winter the tubers often decay in the centre.

The pretty argyrites should be grown in quantity, as it brightens the edges of a stage so well, and is constantly in demand for other decorative purposes. Other good varieties are Aida, Fermingi, Auguste Lemoine, Baron de Rothschild, bicolor splendens, Chantini, Chelsoni,

plants will do well to visit, during April or May, some well known nursery where they are largely grown. They can then secure plants which take their fancy in time to grow them into nice specimens the same season. It seems a pity that a class for Caladiums is not provided at a greater number of shows, and nurserymen might give an impetus to their culture by offering prizes for special varieties.—PLANTSMAN.



KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

THE annual general meeting of this Society was held at the Kingston Coffee Tavern on the evening of Monday, February 12th. There was an unusually large attendance of members. Mr. William Drewett presided.

The report showed that the Committee have closed the accounts for the year 1899 in a better condition than for a time seemed possible, though they regret that it has not been done without falling back on Rule 6 of the Society, which says: "The full amount of prizes offered will be paid if the funds admit; but should they prove insufficient they will be paid in proportion to the funds."

Having briefly stated the drawbacks under which the Committee have had to labour for two years, it is pleasing to be able to present a balance-sheet showing a sum in hand of £1 14s. 9d. To that has since been added two other sums got in, increasing the balance to £3 3s. 8d., and hopes are entertained of recovering a little more.

The Society now stands clear of all pecuniary obligations, though it had been hoped to realise sufficient to make up the prize money to the full amount. In these encouraging circumstances the Committee appeal for continued support from subscribers, and give the assurance that strenuous efforts will be put forth to make the twenty-fourth exhibition of the Kingston and Surbiton Chrysanthemum Society more attractive by providing additional classes for "small growers" and amateurs.

The Committee desire to acknowledge the liberality of Sir Whittaker and Lady Ellis, and thank the worthy Baronet for doing the Society the honour of being its President during the year he filled the office of High Sheriff of Surrey.

This report and balance-sheet was adopted without material discussion, and was regarded as particularly satisfactory. Mr. A. Dean remarked that the Society was under great obligation to Mr. Drewett, who had, in his capacity as Chairman of the Committee, been thus able to place before the members so excellent a financial statement. Sir J. Whittaker Ellis, Bart., High Sheriff of the county of Surrey, was unanimously elected to the position of President. The list of Vice-Presidents and Lady Patronesses, rather lengthy ones, was left to the Committee to revise and complete. Mr. A. W. Homersham was unanimously re-elected Treasurer, being also thanked for his services, and Mr. W. Hayward, florist, Fife Road, Kingston, was elected Secretary.

A tough contest then took place for the membership of Committee, twenty members having to be elected, twenty-three persons being proposed. The voting was by ballot, and it was found that Messrs. W. Drewett, W. E. Wells, A. Dean, Randall, Hawkes, Pitcher, Neave, Cusbon, Blencowe, Smart, Lane, Atkins, Dorsett, Hill-Jenkins, Watts, Bolton, McCormack, Gibbons, and Pead were elected. Of this number twelve were gardeners, and representative of a wide district. It was agreed to hold a meeting of the Committee on the 18th inst. A cordial vote of thanks to the Chairman closed the proceedings.

MADAME CARNOT AND OTHER SPORTS.

MANY growers will welcome the Crimson Carnot with open arms, but from the remarks of Mr. Wells we may infer that he is far from satisfied that he has the correct thing. Your correspondent is not the only grower to whom Mr. Perkins wrote to inquire as to the value of the "sport," and one asked for information as to whether it was a stem or root sport, to which request no reply has been received. How many have fancied that they had sports by a plant coming contrary to the colour expected, when it was simply a matter of cutting or label getting into the wrong pot. Mr. Wells says the bloom on the plant was similar to John Shrimpton, and attributes the short florets to the cramped pot room. Most growers' experience of a late and poorly grown bloom of Madame Carnot is that the florets come long and narrow and the bloom quite opposite in form to J. Shrimpton. Your correspondent further hopes that the buds in the small plant will come the same colour. Surely a plant rooted in May and giving a crimson bloom in December is not likely to revert to white again in February?

Anyhow it is a most extraordinary occurrence that the most beautiful white variety should favour us with two shades of yellow, then a pink, and now a crimson. It will be the first time, I believe, that a white has sported to a crimson. Whenever the "Crimson Carnot," pure and simple, is beyond dispute, it will be the finest acquisition of recent years.

Writing of sports, is it not remarkable how constitution and habit

of growth are frequently altered? With Madame Desgrange the yellow sports are later in bloom and better in foliage. Now we have a white sport which is whiter and larger than the parent. On the other hand how many times has Mrs. Ritson, the white sport of Vivian Morel, been found on the exhibition board? With most, if not all growers, it can only be got one-half the size of its parents. Then who can (or could) grow Mrs. Trafford equal to its parent, W. Tricker? and finally, who has seen the Crimson Pride of Madford (Mabel Kerslake and Pride of Stokell) to equal in size and form their parents? It is very plain that sports do vary considerably in habit and constitution as well as in the colour of blooms.—W. J. GODFREY.

THE QUEEN.

THE Queen is not a new variety, but was sent over from America in 1894, or, perhaps, one year earlier. It, however, received a certificate on November 17th, 1894, from the Floral Committee of the N.C.S., where it was staged by Mr. H. J. Jones. During that and two subsequent years I grew plants of it for the production of exhibition blooms, but being unsuitable for that purpose, and developing suitable traits in its character for late blossoms, it was relegated to that position, and has been grown thus ever since with success.—E. MOLYNEUX.

DECORATIVE CHRYSANTHEMUMS.

"W. S., Wilts," asks on page 98 for information respecting decorative varieties, and especially those suitable for January cutting, asserting that there are not many varieties that can be claimed to be January flowering under natural conditions. We must first form an idea what is "natural." I suppose a plant that is rooted in heat, grown in a pot, the growths stopped and tied to stakes, and the growths or buds in any way trimmed or restricted cannot be called natural growth. I take it "W. S." means late flowering without special treatment.

During the past season I caused to be grown nearly 4000 plants in over 100 varieties solely with the object of discovering which were best for decorative or market purposes, and I may add such experiment will not again be repeated—at least, upon such an extensive scale, for although the trial has been instructive and interesting it was far from remunerative.

There is, comparatively speaking, very little demand for decorative varieties, and those who grow them are not struck with the "Mum fever" to anything like the same degree as are growers of exhibition Japs. In spite of all that is being said as to the little encouragement given to Anemone-flowered, single-flowered, and other sections, it is the monster blooms of the Japanese section on the formal green boards which have promoted, and will continue to promote, the fancy for Chrysanthemums. And again, in spite of all that is being written about colour, form, and freshness of the blooms, size is the first consideration with all of our prominent judges. "W. S." in his mention of that superb variety, R. Hooper Pearson, hints at its being deficient in size for the boards. We are years behind the Americans in judging the merits of Chrysanthemums. With them colour stands first, but then the blooms must have stems sufficiently strong or stiff enough to hold the head up without ties or wires. With the Americans blooms are grown for decoration or to be admired for their beauty. With us to win prizes is the main object, and I again repeat size stands first. Such dull, colourless, or "muddy tinted" varieties as Mrs. W. H. Lees, Mrs. H. Payne, Australie, International, Lady E. Clarke, Madame C. de Terrail, and others would not be countenanced in America; but such varieties as R. H. Pearson, Mrs. Mease, Elma, Mrs. Coombes, H. J. Jones, and Miss Alice Byron are preferred.

But to return to our text, "Decorative Varieties," as understood by me. I believe I am correct in asserting that the Floral Committee of the N.C.S. has decided not to award a F.C.C. to a variety of this section. This, to a certain extent, is "throwing cold water" on the class. As to good varieties for late blooms, I would recommend, as whites, Christmas Favourite, Mdle. T. Panckoucke, Mrs. Peabody, Mrs. M. Simpson, and Madame A. D. Chatin; Madame P. Rivoire is fine for late December, but requires to be topped late and kept cool if required after Christmas. As a late yellow nothing equals H. W. Rieman. King of Plumes is somewhat earlier, but most useful for sprays. Captain Dellamy, a clear yellow, for late December is strongly recommended. In pinks nothing seems to surpass Madame Perrin, whilst Belle of Castlewood is a delicate flesh-coloured variety which comes in during January. Matthew Hodgson is a good brick red that can be brought in late. Master H. Tucker, as a chestnut-red colour for Christmas and early January, has no equal; the bloom is large, stem good, and it is an easy grower. Royal Standard is darker and very promising.

It must be understood that these are recommended for pot culture. For the planting-out and lifting system some are not suitable.—W. J. GODFREY.



Recent Weather in London.—One of the heaviest snow storms for many years visited the metropolis on Saturday evening. The fall commenced just after five o'clock and continued for about two and a half hours, during which time upwards of 4 inches came down. The night and Sunday were frosty, but on Monday there came a gradual thaw which was welcomed by many, notwithstanding the slush it created. On Tuesday it was dull and light snow fell at intervals, more freely at night, continuing on Wednesday with a steady thaw.

Weather in the North.—The frost that set in with the beginning of the month continues with increased severity, having ranged from 13° on the 5th to 22° on Sunday morning. Heavy snowfalls are reported from both north and south of the country, and the appearance on Monday with 19° of frost was quite unchanged.—B. D., *S. Perthshire*.

Gardening Appointments.—We learn that Mr. Henderson has resigned his appointment at Thoresby, after thirty-eight years' service, on an annuity which his late employer left him at his death. His foreman, Mr. William Robertson, succeeds him. Mr. J. Barson, for the past five years general foreman at Eastnor Castle, and previously at Osberton Hall, Notts, has been appointed head gardener to the Earl of Sandwich, Hinchbrook, Huntingdon. Mr. James MacMachan, late head gardener to H. B. St. George, Esq., of Brackernagh Lodge, County Galway, has been appointed to a similar position in the gardens of E. F. Baker, Esq., Tuxedo Park, New York, U.S.A.; and Mr. John J. Brian, late head gardener to Sir Edward Hudson Rinehan, Bart., Glanville Manor, Fermoy, has been appointed head gardener to Captain Rye, D.L., Ryecourt, Cork, in succession to Mr. S. McLean.

Fruit Tree Pruning.—It has always impressed me, since coming to years of discretion, that half the operators in the above process, if asked the best time to prune fruit trees, would name the winter. I am a strong advocate of summer pruning, or pinching, but where this is done it has to serve in many instances for both seasons, on the score that as the tree looks tidy and trim, other more important (?) work must receive attention. This reasoning is radically wrong, and should not be allowed a place in any gardener's mind. All the same, it is a fact that if anything has to be neglected in the routine of gardening it is the fruit trees. This cannot be denied, at least in a large district known to me. Whether trees were summer pruned or not they should be put in order now, as nothing looks so ungardenerlike as an ill-pruned tree, whether on a wall or in the open ground.—A. MIDLAND GARDENER.

The Season's Bloom.—It may be rather early yet to take stock of fruit bloom prospects. Certainly there is no lack of buds, Nature having done her part in furnishing those in abundance. Further, we have had rain in much greater plenty than fell last winter, and, so far, the outlook is promising. But one of the most agreeable features of the winter up to the present time at least, has been the entire absence of exceptionally warm days, such as we have often had at Christmas, and in January and February, and which warmth has so often forced bloom buds open weeks before they should under normal conditions be. We have now got into February, and nothing in connection with fruit production outdoors is forward, indeed all things are in a very restful condition. If we can find the same comparatively dormant condition existing when we get into March then we shall have good reason for hope. Early in April is quite soon enough for Peaches, Nectarines, and Apricots to bloom, and towards the end of the month for Pears, Plums, or other fruits on east or west walls, with early in May for Apples and Pears in the open. All the settings, if the bloom expands at the times named, have the advantage of greater warmth and light to assist fertilisation, and fecundation is much more rapidly secured. When bloom expands early it often does so before the fertile organs are fully matured, and then, if a spell of considerable cold follows, pollen grains are greatly injured. No weather conditions seem to be more productive of a good fruit crop than does a cold winter and a warm spring.—A. D.

Royal Meteorological Society.—At the ordinary meeting of the Society to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 21st inst., at 7.30 P.M., the following papers will be read:—"Report on the Phenological Observations for 1899," by Edward Mawley, F.R.Met.Soc., F.R.H.S. "Results of Percolation Experiments at Rothamsted, 1870-99," by Robert H. Scott, D.Sc., F.R.S.

Presentation to Mr. J. Barson.—Mr. J. Barson, who on his leaving Eastnor Castle, where he has been general foreman for the past five years, was on February 8th presented with a handsome silver tea and coffee service from the staff in the Castle Gardens. Mr. G. Mullins, the head gardener, made the presentation, and said Mr. Barson had the good wishes of all in his new undertaking. In addition to the above Mr. Barson was presented with a handsome marble clock from the members of the Eastnor Castle Cricket Club.

Renewing Fruit Trees.—Many blanks in gardens and orchards remain to be filled, and spring planting rightly done answers very well. Usually the best fruit catalogues give sound hints as to varieties most suitable for certain positions, but every fruit grower should give his closest attention to those best adapted to the soil and situation at his command. Never plant a tree in the previous one's position without using fresh soil. A good top spit of old meadow land, incorporated with road scrapings if too retentive, a little decayed manure, and mortar rubble or lime scraps, especially if for stone fruit, should prove a good medium for most fruit trees to thrive in. Take out the old soil 1 yard deep and wide, and if the situation is wet well drain with brickbats covered with turves. A stagnant subsoil is a common cause of the cracking in Pears as well as Apples. This may be remedied by healthy roots kept nearer the surface in sweet wholesome soil. Plant carefully and well, and good results will follow.—W. S. D.

Cunninghamia sinensis.—A native of the southern parts of China, this is one of the handsomest Conifers in cultivation, and at the same time one of the most difficult to deal with. In common with many other plants of this order, it has the habit of continuing to grow late in the autumn, and commencing again early in the spring, so that severe frosts cut these premature or unripened growths off, and cause the plants to assume a dwarfed, spreading condition, instead of making fine Araucaria-like specimens 40 to 50 feet high, as they do in their native habitat. Such being the case, it is only in warm, sheltered situations that it can be seen to the best advantage. It should be planted in a deep, rich, rather stiff but well drained soil, and must not be allowed to suffer from want of water at any time. The leaves, nearly 2 inches in length, are sickle-shaped with a twist at the base, coriaceous in texture, light green above, and marked beneath with two broad glaucous lines. The edges are serrated, a character which is far from being common among Conifers. It was first introduced to this country in 1804, but is not as yet either a common or a popular plant.—C.

Notes from Ireland.—The weather is severe, with snow and heavy night frosts. My footsteps left their imprint in the snow for several miles ere the seat of Lord Cloncurry at Lyons was reached. The time spent with Mr. Rigg, the gardener in chief, was most enjoyable. Carnations are a great speciality, and although the season is not the most propitious for tree Carnations, the house was very beautiful. The collection is a representative one. Mr. Rigg has raised a seedling which has a bright future before it. In an adjoining house Primulas and Cyclamens were strongly in evidence, also bulbous plants, and a specimen of *Daphne indica* diffused delightful fragrance. The experiments of Mr. A. Black of Carton, for the coming year, will be watched with interest, after his successful flowering of new hybrid Water Lilies in the open air. He is going to try and flower the *Victoria Regia* in the same pond, also to see if he can grow the *Papyrus antiquorum* outdoors. The Irish Gardeners' Association and Benevolent Society held its annual meeting on January the 25th. Mr. Cotter was President, and there was a fair attendance of members. The Secretary read the Committee's report for the year ending 31st December, 1899, which showed the Society was making slow but sure progress. The Chairman, in placing the report before the members for adoption, said he was glad to see the Society had made satisfactory progress and to know the monthly meetings were a success. Mr. McDonough seconded the motion. The officers for the ensuing year were then elected.—A. O'NEILL.

Timber in Victoria.—Mr. Perrin, the Victorian Conservator of Forests, reports that between the years 1888-89 and 1897-98, 615,603 valuable timber trees were planted by hand in permanent sites. In addition to these some 380,000 Blue Gums and Sugar Gums are thriving at Havelock, Majorca, and You Yangs. These, however, were sown broadcast and thinned out afterwards. The number of applications for surplus stock at the Macedon nursery continues to increase year by year. Nearly 50,000 were distributed from Macedon during 1898. The three most popular trees for the northern plains are the Sugar Gum, Pepper tree, and Locust tree, and to these may be added the Tallow Wood of New South Wales.

Bristol Gardeners' Association.—The fortnightly meeting of the Society was held at St. John's Parish Room, Redland, on Thursday, 8th inst., Mr. W. E. Groves presiding over a good attendance. Mr. Rogers of Staple Hill supplied the paper, which was on the subject of tuberous-rooted Begonias. Dealing with the culture of the plant in a very skilful manner, he said seeds should be sown in January in a temperature of 60° to 70°, pricked off as soon as possible, and kept potted as growth proceeded. The soil recommended for all stages was loam, leaf mould, and sand. For greenhouse purposes the plants should be kept in a light house, and as near the glass as possible, a damp atmosphere being the best for them. Mr. Rogers strongly urged the use of Begonias for bedding, and gave much valuable information regarding their culture for this purpose. A good discussion followed, and Mr. Rogers was accorded hearty thanks for his attendance. Prizes for an Orchid in bloom were awarded Messrs. Bannister and Newberry and a certificate of merit to Mr. Maddock for a well grown pair of Cyclamens.

Woolton Gardeners' Mutual Improvement Society.—A well attended meeting, comprising the best of the gardeners in the Woolton District, met together in the Mechanics' Institute on Thursday evening to hear a lecture by Mr. Duckett Cowan, a son of Mr. John Cowan, of The Nurseries, Gateacre, near Liverpool. The chair was occupied by Mr. R. Pinnington, of Roby. In introducing Mr. Duckett Cowan to give his lecture on "Reminiscences of My Travels in Collecting Orchids in South America," the Chairman complimented the Secretary and Committee on their varied programme for the session. Mr. Cowan at the outset briefly described his journey and the difficulty he had owing to his arriving at the time of the revolution, and continuing treated his audience to a most interesting dissertation, in which all the most interesting points were brought into conspicuous prominence. The lecture was a great success, being forcibly delivered and heartily appreciated. From the President's capital collection of Orchids came a splendid plant of the Woolton Wood variety of *Cypripedium Leeanaum* with twenty-four flowers, a credit to the owner and the gardener, Mr. Todd. A certificate was at once awarded. Votes of thanks to lecturer and Chairman closed the meeting.

Exeter Gardeners' Association.—At a recent meeting of the Devon and Exeter Gardeners' Association a paper on "Gardening as a Profession," was read by Mr. G. Camp, gardener to Mr. E. Byrom of Culver. The essayist, in dealing with the gardening profession of the present day, spoke of the many years of incessant study necessary to qualify the young gardener in the many branches of the art. He was continually under the influence of atmospheric conditions which physically affected him, and he was, moreover, constantly beset with obstacles that taxed his time and patience. The gardener's position, however, was one that required the careful consideration of all connected with it. The Gardeners' Royal Benevolent Institution was rendering valuable assistance to many infirm gardeners; but the funds of the Society were by no means adequate. He expressed surprise that so few gardeners subscribed to that Institution. Though the salaries were not high, each could contribute something. He expressed the idea that entertainments could be successfully carried out by the gardeners in aid of the funds of the Benevolent Society. In conclusion, Mr. Camp reviewed the great transformation which had taken place in horticulture during the past century, and also spoke of the researches that were continually going on in every part of the globe at the present day. Commenting on the improved standard of excellence of the produce of the British gardener, he urged that the time had come when greater efforts should be made on behalf of the profession, either independently or by strengthening the hands of the Gardeners' Benevolent Institution. Mr. Meyer occupied the chair. A discussion followed the reading of the paper, and a hearty vote of thanks was passed to the essayist.

Birmingham Gardeners' Association.—Mr. G. Gordon, V.M.H., delivered a lecture entitled "Garden Roses" on the 5th inst. before a good attendance of the members. Mr. W. B. Latham occupied the chair. After a comprehensive exposition on the cultivation especially of the Hybrid Perpetual Rose, including the pruning of climbing Roses, and for which a sparing use of the knife was advocated, a select list of several varieties of Roses suitable for growing near towns and smoky districts, adapted for cultivation by amateurs or small growers was given. Standards were not strongly recommended, unless for some of the climbing section budded upon tall standards, so that the long shoots might depend, and in time form very interesting fountain-like heads, covered with a profusion of bloom. An excellent discussion followed.

The Greatest Sugar Country.—The average yield of sugar to the acre of cane is greater in the Hawaiian Islands than in any other cane-growing country in the world, and its standing in this respect demands our attention. In "Harper's Weekly" there has appeared a most instructive review of the Hawaiian sugar industry, from which we learn that the yield varies a great deal; the average yield of Maui, for instance, is about 3½ tons of sugar to the acre. Hawaii's average is lowered by the smaller producing qualities of her leeward or dry side, but would not go lower than 4 tons; Kauai, from 4 to 5 tons; and Oahu, 6 to 7 tons. There are, of course, pieces of ground, even entire plantations, on each of these islands where the yield would greatly exceed the average of the island; one plantation of Oahu, for instance, yields 10 tons of sugar to the acre (it takes 7 to 8 tons of cane to produce a ton of sugar), and special yields of even 16 tons per acre have been obtained from given sections of the same Oahu plantation. The quality of these figures is the better appreciated by comparison with the yield of Louisiana. The average yield of Louisiana, according to the figures of Professor W. C. Stubbs, Director of the State Experiment Station, varies from 1 ton to 2½ tons of sugar per acre, the average being perhaps not over 1½ ton.

January Weather at Hodsock Priory, Worksop.—Mean temperature for the month, 38·8° + 2·5°; maximum in the screen, 52·5° on the 23rd; minimum in the screen, 26·5° on the 28th; minimum on the grass, 17° on the 21st; frosts in the shade, eight, on the grass twenty-six; sunshine, twenty-six hours, or 11 per cent. of the possible duration, difference from average, - 11. Rainfall, 2·93 inches, difference from average + 1·13; rain fell on twenty-one days, maximum fall 0·90 on the 6th. A mild and rather wet month, with very little frost. —J. MALLENDER.

January Weather at Dowlais.—Rainfall 6·34 inches, which fell on twenty-seven days. Greatest fall 1·30 inch on the 6th. Snow fell on the 26th and three following days, with the wind very cold. For the corresponding period last year the rainfall was 9·81 on twenty-two days. Temperatures: Mean maximum, 39·161°. Highest reading, 45° on the 17th, and down to 32° on the 31st; mean minimum, 30·387°. Lowest reading, 22° on the 4th and 5th; below freezing point on twenty-one nights. Highest reading in the sun, 63° on the 4th. Sunless days, eighteen. The prevailing direction of the wind was S.W. and W.—WM. MABBOTT.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1900.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
February.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday.. 4	N.N.W.	deg. 34·2	deg. 33·9	deg. 36·3	deg. 33·1	ins. —	deg. 36·9	deg. 40·2	deg. 43·9	deg. 31·5
Monday.. 5	N.N.E.	35·0	33·9	37·1	31·8	—	36·6	39·8	43·6	28·4
Tuesday 6	N.N.E.	34·5	31·6	39·1	34·0	—	36·8	39·8	43·4	30·3
Wed'sday 7	N.N.E.	28·4	26·1	34·9	24·9	—	36·1	39·5	43·2	15·9
Thursday 8	N.N.E.	25·0	23·3	33·9	19·2	—	35·3	39·2	43·1	9·0
Friday .. 9	E.N.E.	18·3	18·1	31·1	15·7	—	34·8	39·1	42·9	8·9
Saturday 10	E.S.E.	27·8	26·7	36·5	16·8	0·40	34·3	38·6	42·9	7·5
MEANS ..		29·0	27·7	35·6	25·1	Total 0·40	35·8	39·5	43·3	18·8

The temperature has been very low, with cold north-easterly winds. About 4 inches of snow fell on the evening of the 10th inst.

SEED SALE—NON-GUARANTEED CLAUSE.

SPEAKING from memory, and not *ex cathedra*, I believe that the "non-warranty" clause only gives protection in cases of difference of quality or variety in one kind of seed, and that the dealer who sold "Turnip for Cauliflower" would get no more protection than he deserved from it. The clause referred to is an absolute necessity in the seed trade, and it would be almost impossible to do business without it. The imputation that it is used as a shelter for dishonest dealing is absolutely unfounded, as there is no more honest body existing than the seed trade as a whole, added to which a good reputation is the breath of life to its members, and the least suspicion of unfair dealing would ruin any seed-dealer in a few seasons. Without some protection every half-crown packet of seed sold would entail a risk of legal action and the loss of hundreds of pounds. Setting aside the remote chance of malicious false evidence, the risk of the accidental mixture or transposition of seeds by the purchaser or his assistants would be always present, the results of which are naturally, as a rule, put to the unfortunate seedsman's account.

But there is a much more important matter to be considered, which is the immense variation that results from good or bad cultivation, or the prevalence of exceptional heat or moisture during the whole or a part of the growing season. To give just one instance, which the case cited by "A. D." recalled to me. A large farmer near here asked my father to call and look at a field of Turnips grown from his seed. On arrival at the field he was shown a crop so long-necked and generally malformed that he promptly disowned them, and declared that such could not be the produce of a good stock of seed. "Well, I should have thought so too," said the farmer, "and should never have bought any more seed from you, only I happened to have a few pounds of seeds left over from last year, from which I grew one of the grandest crops ever seen. The two are side by side, and now no one can see any difference, both being equally bad." How far variation may go in this way would puzzle the best horticultural expert to define, and a question of this kind might as well be submitted to the test of tossing a coin as that of the average judge and jury.

If "A. D." would only look at the other side of the question he would easily see that a seedsman's life would "be not a happy one" if every packet of seed he sold the results of which did not equal his customer's expectations rendered him liable to damages and costs, whether the failure were owing to adverse seasons, the lack of knowledge, skill, or industry on the part of the purchaser, or any other cause.—CHAS. E. PEARSON, *Chilwell, Notts.*

APPLE HORMEAD PEARMAN.

ATTENTION is drawn to a highly serviceable but not generally grown Apple on page 124. It may, possibly, be also good for the orchard, but I have only grown and seen fruits equal to the one represented produced by cultivated garden trees. It is a remarkably fine fruit, but, then, Mr. Bunyard is a fine cultivator. It is above the ordinary size, and it is probably because the fruits are generally smaller that the variety is not commonly seen at exhibitions. If it were, trees of Hormead Pearmain would be more generally planted. The variety is a healthy and what may be described as a fruitful grower, spurring freely and naturally, and the fruits are when reasonably well grown quite large enough for use. The tree makes an excellent cordon and a model espalier.

The name Hormead's on the page quoted must be the result of a clerical error. When once visiting the late Dr. Hogg in Sussex, he stated that the name was wrongly given in most catalogues, as the Apple was not named after its raiser, but after the place with which it was associated, and hence the name Hormead Pearmain. I think the Doctor said it was a Sussex Apple. Perhaps Mr. Cheal may be acquainted with its origin. I have seen it bearing well in the Lowfield Nurseries, and I think it is a favourite Apple there.—POMOLOGIST.

PINCHING FRUIT TREES.

MR. GEORGE PICKER some time ago asked if any practical readers of the *Journal of Horticulture* could prove that by pinching or stopping the shoots of fruit trees large healthy fruit buds could be produced earlier than by trees that are not pinched. I, for one, say pinching will not produce buds earlier in such a case. If two Pear or Apple trees of the same variety were planted at the same time, one to be pinched, the other not, I venture to say it would be found that pinching to promote early fruiting is time thrown away. When pinching was first introduced did the teachers say pinch the trees into form, or did they say pinch to form fruit buds. Probably they said first form the tree so that it can be pinched afterwards if required.

Seeing that "our Journal" grows with the times, why not let fruit trees do the same for yielding full crops of high quality fruit? But will such be had in the best manner by discarding pinching after the trees are formed? I say it would not, but that bud formation is facilitated by pinching if this is done at the proper time. No exact time can be stated. The cultivator must determine that from the condition of the

tree. If done at the right time the natural course of sap will be diverted and take a circular course, which assists blossom buds to form that would not do so if pinching had not taken place.—H. MITCHELL.

BLOSSOM BUD FORMATION.

REFERRING to "A Lincolnshire Gardener's" article on page 87 of the *Journal*, I may say that no one of experience doubts that transplanting or judicious root-pruning throws fruit trees into bearing; but will your correspondent kindly say at what months of the year shoot pinching should be done, and the manner of doing it, to produce similar effects? There is much difference of opinion on this latter question, and the readers of our *Journal* would be interested in his observations on that phase of the matter.—S. S.

SWEET PEAS.

BETWEEN the suggested conference and the bi-centenary of the Sweet Pea these always welcome flowers are brought more than usually prominent at the present time. As regards a conference, the purpose of which is to classify them into some tangible shape. With respect to their colour sections, there would seem to be divergent opinions; some favour the idea, others do not see the necessity for such a course. This, however, is a matter that concerns the specialist more than the ordinary gardener. The large and increasing number of sorts makes a selection for general purposes an easy matter to make the all-sufficient number of packets, each of fifty or 100 seeds, as the case requires. Moreover, the inevitable "mixed" assortments offered meet many cases, and to such persons the suggestion of a conference is vague and uninteresting. Seedsman, even those who issue unpretentious catalogues, give due prominence to Sweet Peas, enumerating a list of names as well as the "mixed" packets for their patrons to choose between. The large flowering varieties, associated so closely with the name of Eckford, are those most growers will naturally select, and the time is no doubt not far distant when the ordinary strains will be entirely superseded, and find no place either in the seed store or catalogues.

The present month is one in which many make an attempt to sow a few for early gathering outdoors, but the presence of snow at the time of writing affords no prospect of this being done at present. All who have a frame in which a few pots may be sheltered can gain some time by sowing say half a dozen seeds in a 60-pot at once, and standing them therein. If a warmer position can be afforded them until they have made half an inch of growth flowers would be ready some days sooner, hardening them prior to planting finally in a cold frame for some time. The trouble of raising a few Sweet Peas thus is very little, and the gain more than compensates for it. Perhaps it is better to anticipate bad weather, and adopt the indoor sowing at an early period, say in January. There is then no disappointment from unfavourable weather, and once growth is set into action they can be kept steadily growing until the ground is in a suitable state and the weather propitious.

Soil for filling the pots is not a very important matter, nor is a quantity required in ordinary cases. The better, however, it is in quality, the stronger they would be in root growth; but any garden soil, enriched with decayed manure or leaf mould, will give good results. Crowding several seeds into a small space is a fatal mistake to make with Sweet Peas, as it is with every other plant produced by seed, whether in pots or the open ground. The value of thin sowing can be demonstrated by anyone who wishes to take the trouble to carry it out, and this both in its application to pots and the open border. The cost of the seed is of itself a justifying reason for adopting rational sowing, and the greater vigour, both of plant and flower, bring further reward. Like the edible Peas, these like rich soil, and the site changed as often as possible. No plant tires of the soil so soon as Peas, and for this reason gardeners adopt a successional course, sowing not oftener than every third year on the same ground. Where the means do not allow of this, the alternative is to trench the soil deeply, and thus bring to the surface some that has been for some time undisturbed, and incorporating at the same time short manure, preferably in a decayed state. By adopting a course of sowing a few pots of Sweet Peas in January or February there is no necessity for risking outdoor sowings until the ground is in a thoroughly pulverised state in March.

The custom by some specialists of offering collections of Sweet Peas varying in number, variety, and price is an excellent one, and is one that might well be more generally adopted. Those who have submitted them in this way find the patronage justify the action, and a selection of colours made by those who grow them largely is often more satisfactory to the buyer than that made individually.—W. S.

CANADIAN V. AMERICAN APPLES.—It is reported that the shipments during January of Canadian Apples, which are entering into serious competition with American fruit in the London market, were particularly heavy, in one day 7524 barrels, containing 22,572 bushels, having been unloaded. A fine variety of Newtown Pippins, hitherto exclusively obtained from American orchards, was among the importation. The culture of this variety in Canada promises more extensive shipments in the near future.

GARDENS AND GARDEN MANAGEMENT.

CHINA has probably been possessed of gardens in a general sense longer than any other country, except those recorded in the oldest and best book in the world. So far as I can learn no other country takes more interest in the culture of small plots of land, which may be called gardens, than China to-day. Greece and Rome paid some attention to the subject when in the heyday of their prosperity, but it was confined more to the large towns and cities than to the country districts.

Coming to our own country, we have to admit that gardens, as we understand them, are of comparatively modern creation. Climatic causes probably had much to do with this, though no doubt the cultivation of small plots of land was more general in the midseason of our civilisation than is the case now—in making this assertion I mean *pro rata* to the population. Various causes have brought about the great development of gardens in our time. I would fain hope that one of the greatest of these is the increased love of and interest in the purer pleasures of life, which must result from the work and reaping the produce of a well tilled and dressed garden, whether it be a large or a small one.

The extension of commerce caused by steam has no doubt added to our national wealth, whilst at the same time there has been a more equal distribution of it. Hence much larger numbers of the population are enabled to enjoy the pleasures produced by gardens than before. I am one of those practical enthusiasts who think that we are a long way from being at the end of our efforts in this respect—I allude to public and private gardens of all sorts and sizes, such as allotment gardens, botanic gardens, village gardens or playgrounds, Rose gardens, perennial gardens, alpine gardens, fruit gardens, school gardens, window gardens, and other forms. Of course, once we admit a covering of glass we may go on much further.

I must not now enter into the question of exhibitions of garden produce, the subject being too large. Suffice it to say that they are a nineteenth century creation, and so far as my experience goes have done much good on the whole, in increasing the interest in and the pleasures to be derived from gardens.

We now come to the management of gardens. For this, practice is obviously the first essential. Where should this practice be acquired? I would reply in a moderate-sized, well-managed garden, where good average results are obtained. On this subject I would say to young men—Do not be too anxious for a time to get under a glass roof. In these days of multiplication of glass houses, and the consequent interest in what is grown therein, there is danger of outdoor practice being looked down upon. Most gardeners who have passed the meridian of life will bear me out when I say that the base of all sound gardening is to be well grounded in outdoor work. A period of not less than three years is essential for this purpose. Apart from the necessary but somewhat limited demand for specialists, more men fail in outdoor than indoor gardening. By no means do I wish to speak lightly of what may be fitly termed the higher duties of a skilled gardener—viz., under glass culture. I only wish to show that in my experience more young men fail in managing the outside than the indoor department. I know of a garden owner who, when selecting a new garden manager, said, "I want a man who will give us a regular supply of the best vegetables. My place smells of Pine Apples, but we have not a fresh young Cabbage fit for the table."

Having become expert in the use of a spade and all other garden implements, the most important help for a young man is a well-kept memorandum book of times of sowing and planting and other necessary operations of outdoor crops. It is a good plan to write these in the left hand page, and leave the right hand one blank for remarks thereon. Attend to the smaller details of all outdoor work as closely as to the potting of a 20-guinea Orchid or other valuable plant. When changing situations try to get into one where the general culture is on somewhat different lines from the one you are leaving. Use a portion of your leisure time in reading and mastering good books and papers bearing upon the vocation you have chosen. As time goes on extend this reading and writing to other books. I do not say young men should not have recreation, far from it, I only wish to infer there is a time for all things.

After, say, ten years or upwards of such experience as I have hinted at, the time will come to look out for a garden to manage. The young man's first charge in this respect is a very important epoch in his life. Careful bearings should be taken. Besides the eyes of those who employ you those of your confrères will be more or less upon you. Pay strict attention to the wishes and instructions of the former; remember that, in the main, it is their time and means you are using. Do not be afraid of unthinking, if not ignorant, people classing you as merely a servant. To my mind the motto, "I serve," is a noble one, and the College of Heralds has not a better one inscribed on its records. Always be loyal to those who employ you. If a man is found faithful in small matters it may be the passport to a better

position; if not so, you have the consolation of knowing that you have tried to do your duty to the best of your ability.

When circumstances prevent this loyal service, seek the first opportunity of securing another situation; but have good grounds for your action. Of course there are unprincipled and unreasonable employers as well as servants of that sort. As a rule the former do not keep efficient gardeners very long, nor the latter succeed in life. Ascertain the likes and dislikes of those who employ you, and try to meet them. Aim at having all departments of the garden in as good general condition as the means at hand will allow; do not get shipwrecked at the outset in wanting to exhibit the produce grown under your management, if your employer objects. Most of them will grant this privilege in due time, if they find the general work well done. I once heard an employer remark "that the best exhibition table for his garden was his dinner table, drawing rooms, and garden generally." At the present day the majority of employers take a reasonable and liberal view of exhibiting.

Avoid trying to prove to your employer the incompetence of your predecessor. To me this is a blot on the fair fame of a body of men, who, in the main, sympathise with their fellow workers in our ancient craft. If things are in a neglected condition all the better for the new comer to show his skill and management. Visit other gardens when opportunity occurs. Few observant men can go into gardens without learning something either to imitate or avoid. In your dealings with those under your management try and secure their respect. This is best done by fair and consistent treatment. Do not always act as if the garden you are managing was especially made for your own pleasure. Of course, as manager, you are responsible for results, and must have orders obeyed.

Managers of most large gardens have more responsible positions than they used to have. Much more is expected than formerly, and too frequently the means to acquire these increased wants are more or less curtailed, hence the necessity of garden managers keeping their minds open to the best ideas and methods of production. A chief who has a loyal staff can make things meet far better than with a disloyal one. Do not neglect to take a personal interest in the general welfare of those employed under you. Try to be courteous and civil to all, and give help and encouragement when you can.

In conclusion I would say, Try to obtain as much produce and advantage from the means at hand as is possible, and speaking generally, you will be rewarded with a comfortable home, a clear conscience, and the respect of those who employ you.—(*A Paper read by Mr. H. J. CLAYTON, Grimston, at the Hesse Gardeners' Mutual Improvement Society.*)

RHODODENDRONS IN THE WOODLAND.

If the task were put before me to pick out the most indispensable shrub in the garden I should have no hesitation in naming the Rhododendron. When in full bloom in the early summer it is unsurpassed, and after the flowers have gone the habit of the plant and the bright green of its foliage make it a suitable specimen for any position. The Rhododendron, like other shrubs, has its likes and dislikes, though it is by no means fastidious. It delights in a light sandy compost well supplied with humus, and it shows a distaste for very heavy land and soil in which lime prevails. Thus we have it that in some places Rhododendrons grow so freely and increase so rapidly that they are almost weeds, while in others, in spite of made beds, there is difficulty in getting them to thrive. Fortunate, then, is the landscape gardener who pursues his occupation where Rhododendrons do well.

The garden culture of this useful shrub is an old theme, so I will extend my observations beyond the precincts of the garden to the woodland. In the first place my ideal pleasure ground is not that which surrounds so many English mansions, standing in the middle of parks, and having a forbidding fence encircling the domain. The happiest idea of a garden is seen in instances where the pleasure grounds blend naturally into the woodland without any definite boundary line, so that one really becomes part of the other. What a relief it is after the garden to find yourself almost unconsciously in the wild luxuriance of the woodland, about whose grass walks there is a softness and springiness that encourages one to proceed. A garden that ends abruptly lacks a great charm compared with that which loses itself gradually in woodland or wilderness.

The woodland, like the garden, may be well furnished, or it may be bare and uninteresting. Some woods can never be the latter, because Nature does the furnishing. She provides the Aconites and Bluebells, the Forget-me-nots and Periwinkles, and clothes the slopes and dells with Bracken and other Ferns, which have always a touch of beauty, whether it be in the bright emerald of early growth, the darker green of matured life, the yellow and golden brown of decay,

or the dead rustle of winter. There is no need to do much in such a woodland as this. A flowering shrub here, or a coloured foliage tree there, to lend variety, but any more elaborate attempts at furnishing detract from rather than add to the appearance. But Nature is not equally lavish with her gifts, and I have walked out of gardens into neighbouring woodlands where the change has been anything but cheering. Beneath the trees there is nothing more pleasing to hide the bareness of the ground than clumps of luxuriant Nettles; dead trees and broken branches give the place an uncared for look, and you search in vain for that fulness of vegetation which is usually connected with woodlands.

Obviously there is something wanting in such a spot, and what shrub more suitable for supplying the need than the Rhododendron? You may keep the choice hybrids for more conspicuous places within the limits of the garden, as the old-fashioned Rhododendron ponticum is the shrub for furnishing wood and wilderness, for which purpose

old stems, and wait till growth again commences; but if there is any objection to the bareness in the meantime, it may be obviated by starting at one side of the clump, thinning out the majority of the branches and pegging the others down, by which means the bushes instead of being done away with are simply lowered. For planting in game preserves and exposed positions, nothing is more suitable than *R. ponticum*. Rabbits will strip all the bark off young Laurels, but they never interfere with Rhododendrons, nor do the plants succumb to frost in the same way as other shrubs.

There is another position for which Rhododendrons are invaluable, and that is for the margins of woods and plantations. When a carriage drive runs through a woodland it is desirable to furnish the sides with shrubs, particularly if the plantations are of Firs which permit no undergrowth. For this purpose the common Rhododendron is invaluable, as it forms a natural belt. I know of nothing more pleasing than a long winding carriage drive with a broad margin

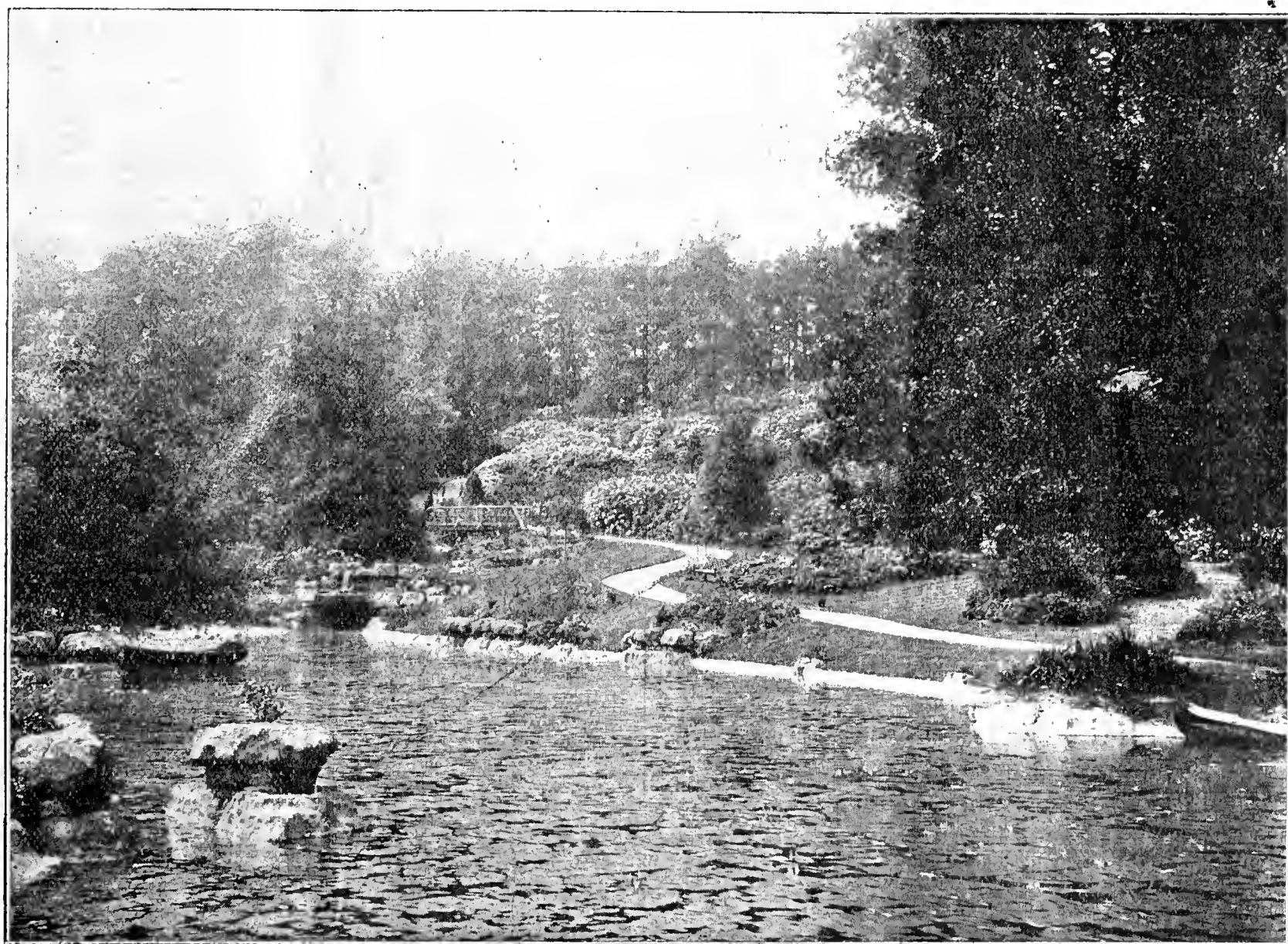


FIG. 35.—RHODODENDRONS AT SUNNINGDALE PARK.

nothing is more accommodating. If the soil is of light character and suits them they flourish and increase rapidly. They need little attention, and the leaves which fall from the deciduous trees provide a natural manure for the Rhododendrons beneath, as they root freely in the decayed foliage. One of the greatest mistakes with timber trees is that of growing them too thickly. How often does one see breadths of fine timber entirely spoiled by being so crowded together that it is quite impossible for any specimen to reach its proper dimensions? Where such is the case it would be beneficial in many instances if the trees were thinned, and the spaces between were planted with clumps of Rhododendron ponticum. There are places where the shrub is perfectly at home, and in such instances there is no difficulty in obtaining any number of seedlings for woodland planting.

Over-luxuriance is very often a fault of the common Rhododendron, and I have had to deal with immense clumps which were at one time effective, but had grown out of bounds and become nothing more than impenetrable thickets. In such cases a drastic measure is to boldly cut them down to the ground, plant seedlings in between the

of turf on each side, then a belt of Rhododendrons, with a background of tall trees. In the early part of June when the Rhododendrons are in full bloom, the effect is charming, and is greatly enhanced if variety is thought of by planting here and there a yellow Laburnum, a Gueldres Rose, and scarlet Thorn.

No one can have a taste for natural gardening without also being imbued with a weakness for the woodland—not the impenetrable thicket of crowded forest trees, which wrongly bears that name, but the natural picturesque woodland, where giants of the forest tower up, where the ground beneath instead of being bare and monotonous, is a wealth of undergrowth in which the common but indispensable Rhododendron ponticum finds a place.—G. H. H.

[Though the photograph reproduced in fig. 35 does not actually illustrate Rhododendron ponticum in the woodland as so ably advocated by our correspondent, it shows how these magnificent plants may be employed in the adornment of pleasure gardens in the immediate vicinity of mansions. The photograph was taken in the grounds of Sunningdale Park, and is reproduced by the kindness of Mr. F. J. Thorne, Major Joicey's able gardener.]

ONIONS.

In the sowing operations connected with the kitchen garden the Onion crop is one of the first to claim attention, inasmuch as Onions sown early have a better chance of attaining to some size and strength before the Onion fly commences to attack them. Another reason for early sowing is the longer season of growth which the crop can have, and thus practically insure a larger size in the bulbs than from later sown seeds. Those, however, who grow for exhibition do not, as a rule, depend on outdoor sowings, but provide themselves with good strong plants from January sowings in boxes in a cool house. When sown thinly in boxes and judiciously managed the young plants are of sufficient size and strength for planting out in April at the required distance apart for forming large bulbs. They soon become established, when the cultural operations of hoeing and feeding may be commenced and continued. Even by sowing in February in boxes earlier and stronger plants may be secured, which when planted out will rapidly grow beyond the attacks of the Onion fly, so for this reason the extra trouble experienced in the early stages is amply repaid by obtaining a more successful crop.

FEEDING.

The majority of growers who cultivate Onions for general use adopt outdoor sowing. Onions require a deep, rich, well-worked soil and an open sunny position. The ground should be freely enriched, such strong manures as fowl, pig, and night soil being best applied in autumn to ground intended for Onions; indeed all natural manures, including cow, horse, or general farmyard, are best worked into the soil some time previous to sowing, turning the soil well at the same time. Artificial manures are appreciated by Onions; nitrate of soda, kainit, and superphosphate may be applied at the rate of half a pound each about ten days before sowing to a square rod of ground, and a similar quantity when the young plants are 3 inches high.

LIQUID MANURES.

Nitrate of soda dissolved in water, but not in larger quantity than a quarter ounce to a gallon, acts quickly on the young seedlings. This stimulant must not be used too freely, but it may be varied by an application of guano 1 oz. to the gallon. Liquid manure made from strong animal manures is beneficial. A quarter of a peck to half a peck of fowl manure may be dissolved in 30 gallons of water, and be given frequently during active growth. Soot water is another good stimulant; this is made by tying a quarter peck of soot in a bag and immersing it in 30 gallons of water. Apply this alternately with other manures. Stimulants are only specially necessary when the largest sized bulbs are sought for, but good ordinary Onions of fair size and reliable keeping qualities may be grown on ground well worked and enriched.

SEED SOWING.

Soil prepared for Onions in autumn may be further forked over prior to sowing, and it is good practice to apply a dressing of wood ashes and soot, working these well into the surface, breaking down and pulverising the lumpy portions. After this tread the surface firmly, very light ground might be advantageously rolled; but all these operations must be carried out in dry weather, therefore it is best to choose the first opportunity in February for doing this. When ready for sowing rake the surface fine and level. The rows may be 1 foot apart, and the drills can be formed by pressing the back of an iron rake into the soil a quarter of an inch deep, having a garden line laid for guidance. Scatter the seeds thinly along the drills, and cover by drawing soil over them from the outside, pressing down firmly.

HOEING AND THINNING.

Further attention will not be necessary until the seedlings are well through the soil, when a light Dutch hoeing will be beneficial. Afterwards weeds must be pulled from among the plants and a preliminary thinning given. This is the time to stimulate growth by the application of artificial manure dressings or liquid manure, and hoe between the plants frequently, for this keeps down weeds, encourages growth, and prevents evaporation of moisture from the soil. Thin out the plants to the final distance apart as soon as practicable.

PLANTS FROM BOXES.

Onions sown in boxes must be protected from the weather until they are hardy enough and strong, which they will be by the month of April if gradually inured by cool frame treatment. It is desirable to give the planted out Onions exceptionally good soil, which may be prepared now by trenching and liberal manuring. When the time arrives for planting out draw shallow drills 12 inches apart, and place the Onions 6 inches asunder. Make the holes so that the roots can be placed straight downwards and not be curled up or twisted. Hoe the ground frequently afterwards to promote growth. The soil, if light, may be made firm previous to planting. When established afford the plants a light dressing of nitrate of soda, kainit, and superphosphate, half a pound each to a square rod of ground, and work it in with the Dutch hoe. Light dressings of pure soot are always beneficial to Onions, fertilising the ground and tending to keep away the fly.—E. BARROW.

ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

THE very unpropitious weather that has prevailed in the metropolis during the past few days had some effect on the number of persons attending the annual general meeting of the Royal Horticultural Society in the Lindley Library on Tuesday afternoon. Sir Trevor Lawrence, Bart., V.H.M., occupied the chair, and was supported by several members of the Council, while in front of the table were to be seen a very representative gathering of both amateur and professional horticulturists. Such preliminary business as the reading of the minutes of the previous annual meeting was quickly disposed of, and a considerable number of new Fellows were elected. The report and balance-sheet given hereunder, having been previously distributed, were taken as read.

REPORT OF THE COUNCIL FOR THE YEAR 1899-1900.

The year 1899-1900 has been one of continued prosperity for the Society.

A large sum of money has been spent on the Lindley Library in recent years, and the Council have now had the books enclosed in glass-fronted cases for the double purpose of preservation and cleanliness. This has greatly improved the appearance of the library.

A catalogue has been published at the price of 2s. 6d. in the hope that many Fellows would purchase it, not only to inform themselves what books the library contains, but also because it forms in itself a reference list to the bibliography of gardening. It would be gratifying if Fellows would also take note of books still wanting to the library, with a view to presenting them.

During the past year valuable books have been presented by the Director of the Royal Gardens at Kew, Dr. Maxwell Masters, F.R.S., Miss M. J. King, the Rev. Professor Henslow, V.M.H., Monsieur Correvo, Monsieur Bois, and others, to all of whom the best thanks of the Society are due. A full list will be published on April 1st in the Society's "Journal," vol. xxiii., part 3.

A corrected list of the awards made by the Society to plants, flowers, fruits and vegetables to the end of 1899 is being prepared, and will be issued during the coming year.

Application is frequently made to the Society by Fellows desiring to have special advice respecting their gardens. The Council have therefore resolved to add a right to this to the privileges of Fellowship and to send a competent inspector to report and advise at the following charges—viz., a fee of £2 2s. for one day (or £3 3s. for two days, when necessary), together with all out-of-pocket expenses. No inspection may take up more than two days.

Under the head of ordinary expenditure at Chiswick £1810 has been spent on the general work and maintenance of the gardens. The receipts by sale of surplus produce amount to £330, making the nett ordinary cost of the gardens £1480.

CHISWICK GARDENS.

The Council wish to call attention to the good work being done at Chiswick under Mr. Wright's superintendence not only in the garden but among the students. During the last two years, for example—of our Chiswick students, one has taken a First Class in Honours in Science and Art, one a First in Advanced Botany, two a First in Elementary Botany at South Kensington; one has been appointed curator of the Botanic Gardens at Antigua; seven have taken a First Class in the R.H.S. Examination in Horticulture; two have set up in business for themselves; four have obtained positions at the Royal Gardens, Kew; one at Kensington Gardens; two at Messrs. Veitch's; one at Messrs. Low's; three in other large nurseries; and one is editor, and another is on the editorial staff, of a garden paper. Mr. Wright reports to the Council:—"The demand for energetic trustworthy young men from Chiswick is rapidly increasing; there is no difficulty in placing such in good situations, our supply being unequal to the demand, but they *must all be workers*."

THE COMMITTEES.

At Westminster twenty-one Fruit and Floral meetings have been held in the Drill Hall, James Street, Victoria Street, besides the larger shows in the Temple Gardens on May 31st, June 1st and 2nd, and at the Crystal Palace on September 28th, 29th, and 30th. An International Conference on Hybridisation was held at Chiswick and Westminster Town Hall on July 11th and 12th. Lectures and demonstrations have been delivered at nineteen of the meetings.

The number of awards granted by the Council, on the recommendation of the various Committees, is as under:—Gold Flora medal, 1; R.H.S. gold medal, 22; silver cup, 24; Hogg Memorial medal, 1; silver-gilt Flora, 28; silver-gilt Knightian, 23; silver-gilt Banksian, 34; silver Flora, 97; silver Knightian, 21; silver Banksian, 170; bronze Flora, 20; bronze Knightian, 3; bronze Banksian, 44; first-class certificate, 65; award of merit, 291; botanical certificate, 16; cultural commendation, 42; highly commended, 8; commended, 1; total, 931. In addition to the above, 1 silver-gilt Flora has been awarded to Mr. H. H. Eaton for having passed first in the Society's examination; and 94 bronze Banksian medals have also been granted to cottagers' societies.

The Council desire to draw the attention of Fellows of the Society to the more extended use which the Scientific Committee might be to them if they availed themselves more freely of their privileges in

submitting instances of diseases of, or injuries to plants, caused by insects or otherwise. The Scientific Committee is composed of gentlemen qualified to give the best advice on all such subjects, either in respect to the prevention or cure of disease. The Committee is also glad to receive specimens of any subjects of horticultural or botanical interest.

SPECIAL EXHIBITIONS.

The Society's great show held in May (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was as successful as ever, and it is a matter of satisfaction to the Council to find that this meeting is now universally acknowledged to be the leading horticultural exhibition of this country. The best thanks of the Society are due to all who kindly brought their plants for exhibition, or otherwise contributed to the success of this show.

The International Conference on Hybridisation held at Chiswick and at Westminster Town Hall on July 11th and 12th was considered both by our home and also by our foreign guests to be an unqualified success, not only from the value of the papers read and communicated but also from the pleasant opportunity it afforded for the meeting of horticulturists from all parts of the world. The report of the Conference has been unavoidably delayed. It will form a distinct and very valuable volume of the Society's Journal.

The exhibition of British grown fruit held by the Society at the Crystal Palace on September 28th, 29th, and 30th was, considering the very unfavourable season, most satisfactory. Full particulars will be found in vol. xxiii., part 3 of the Journal, which will be issued in the course of a few weeks.

As an object-lesson in British fruit cultivation this annual show stands unrivalled, and is of national importance. Those who have visited it from year to year cannot fail to have been impressed by the wonderful advance which has been made in the quality of the hardy fruits exhibited. And as the importance of fruit growing in this country cannot well be over-estimated the Council invite Fellows and their friends to support them in their efforts to maintain and improve this Exhibition by visiting it, and by subscribing to its funds. For it cannot be too widely known that the continuance of the Show is absolutely dependant on at least £100 being raised by subscription each year towards the prize fund. The Show involves the Society in a very large expenditure without the possibility of any financial return. The Council have therefore established the rule that they will not continue it unless sufficient interest in it is taken by Fellows and their friends to provide £100 towards the prize fund. And this will in the coming year 1900, be even more important than heretofore, as the Directors of the Palace have signified to the Council that they feel compelled to decrease their contribution by £50. A glance at the list of subscribers will show how small has been the interest taken by the bulk of the Fellows. The Council would point out that this is not a local show with a few large prizes, but that a multitude of small prizes have been arranged in order to secure the best fruits in each section; special prizes have been allotted to market growers; and counties have been grouped in such a way that growers should not have to compete with exhibitors from localities more favoured by climatic conditions. These points will be still further extended should sufficient financial support be forthcoming. Subscriptions should be sent at once to the Secretary, 117, Victoria Street, Westminster, and if the list prove satisfactory the schedule will be issued in April, and the Show held on September 27th, 28th, and 29th, 1900. The list of subscribers for 1899 will be published in part 3 of vol. xxiii., of the Society's Journal.

An invitation was received and accepted for sending a deputation to visit a Show of Daffodils and other early spring flowers and produce, held at Truro on the 21st and 22nd of March, 1899. The Council desire to express their best thanks for the great courtesy and hospitality with which their deputation was received in Cornwall.

The Journal of the Society has been continued so as to enable Fellows at a distance to enter more fully into, and reap the benefits of the study and work of those actively engaged at head-quarters. Vol. xxii., part 4, and parts 1 and 2 of vol. xxiii., were issued during the year; vol. xxiii., part 3, will be ready on April 1st, and vol. xxiv., on the Hybrid Conference, as quickly as possible.

EXAMINATIONS.

An examination in the principles and practice of horticulture was held on April 11th, concurrently in different parts of the United Kingdom, a centre being established wherever a magistrate, clergyman, schoolmaster, or other responsible person accustomed to examinations would consent to act on the Society's behalf, in accordance with the rules laid down for its conduct. No limit as to the age, position, or previous training of the candidates was imposed. 165 candidates presented themselves for examination. The names and addresses of those who succeeded in satisfying the examiners, together with the number of marks assigned to each, will be found in the Society's Journal, vol. xxiii., page 64.

It is proposed to hold a similar examination in 1900, on Wednesday, April 25th. Candidates wishing to sit for the examination should make application during February to the Secretary, R.H.S. office, 117, Victoria Street, Westminster.

The thanks of the Society are due to all the members of the standing Committees—viz., the Scientific, the Fruit and Vegetable, the

Floral, the Orchid, and the Narcissus Committees, for the kind and patient attention which they have severally given to their departments.

The thanks of the Society are also due to all those who, either at home or abroad, have so kindly presented plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's Journal, vol. xxiii., part 3, which will be issued on April 1st.

The Council wish to express, in their own name and in that of the Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the fortnightly meetings in the Drill Hall. They are glad to find by the increased and increasing number of visitors that the Society's fortnightly meetings are becoming fully appreciated by the Fellows and public in general.

A desire having been expressed that the so-called fortnightly meetings should be actually fortnightly throughout the whole year, it will be found by referring to the Book of Arrangements, 1900, that the Council have acceded to this request as far as it was possible to do so having regard to such obstacles to absolute regularity as the Temple and Crystal Palace Shows, and the occurrence of Bank Holidays.

Besides the lectures, delivered at various meetings, the Rev. Professor Henslow, V.M.H., has most kindly given several floral demonstrations, short accounts of which have appeared in the Journal.

A very courteous proposal has been received from the Richmond Horticultural Society, inviting the Council, with the Fruit, Floral, and Orchid Committees, to sit at Richmond on the occasion of the local Society's show in the Old Deer Park on Wednesday, June the 29th. This invitation has been cordially accepted, and the Committees will sit, and plants, &c., will be brought before them for certificate, exactly as if they were sitting at Westminster. Directions will be found in the Book of Arrangements, 1900.

THE NEW CHARTER.

Ever since the great revival of the Society in 1887 questions have from time to time arisen as to the legality of certain of the bye-laws. It has been urged that this or that bye-law was *ultra vires* because it was apparently in conflict with the Charter. And when recourse was had to the two Charters under which the Society is incorporated, the later (and therefore presumably the ruling) Charter was found to be so encumbered with matters relating solely to the South Kensington lease from the Commissioners of the 1851 Exhibition (which matters ceased in 1887 to have any further connection with the Society), that it seemed well-nigh impossible to separate the small residuum of the Charter that was still applicable to the Society's altered position, from the mass of enactments which had become obsolete and irrelevant.

There appeared to be only two alternatives, either to abide by the existing bye-laws, or to petition her Majesty to grant a new Charter. The expense involved in the latter course has hitherto been an obstacle, but at the beginning of the present year, 1899, the conditions of the Society's finances appeared to the Council to be such as to warrant a petition being made to her Majesty for a new Charter, and a considerable part of the year has been employed in drawing it up. The petition to her Majesty and a draft of the new Charter were submitted to a general meeting of the Society held on June 21st, 1899, and were unanimously adopted and ordered to be sealed with the Society's seal and presented to her Majesty the Queen.

The Council have much pleasure in announcing that on the advice of the Privy Council, her Majesty acquiesced in the petition, and on the 14th day of November, signed the Supplemental Charter, and ordered it to be sealed with the Great Seal of the Kingdom.

The Council have appointed a Committee to draw up a draft of new bye-laws, which they hope to lay before a general meeting at no distant date.

THE SOCIETY'S CENTENARY.

The subject of the celebration of the approaching centenary of the Society in March, 1904, is naturally attracting considerable attention. After the consideration of various excellent projects (some of which, however, appeared impracticable on account of their expense), the Council have decided to recommend the acquisition of a new garden in the place of Chiswick as being, under all the circumstances, the best and most practical method of celebrating the centenary. A garden for experiment and trial is an absolute necessity for the Society, and Chiswick has recently become so surrounded with buildings, and the atmosphere so heavily charged with smoke, that not only has the difficulty of cultivation enormously increased, but it is feared that the results obtained from the trials are rapidly ceasing to be reliable. It is therefore proposed to issue an appeal to all the Fellows, and to raise a fund for the purchase of a more suitable site for a garden, in memory of the first hundred years of the Society's existence.

The Council fully recognise the advantage of the Society's possessing a hall of its own in which plants, flowers and fruits can be seen by the Fellows under more favourable conditions, as regards light and space, than are possible in the building at present used for the meetings. They do not, however, as yet see their way to its attainment, but will be happy to consider any suggestions concerning it.

NOTABLE LOSSES.

The Council have the sad duty of recording the death of fifty-four Fellows during the year, and among them they regret to find the names

HARPER BROS., *Chartered Accountants*,
10, Trinity Square, Tower Hill, E.C.

In moving the adoption of the report of the Council and the balance-sheet, Sir Trevor Lawrence took the former, and practically dealt with the paragraphs in their order. In doing this salient points were emphasised, but with such a satisfactory condition of affairs nothing particularly new or startling could be advanced. Several tributes were paid to the various Committees and officials, and gratification expressed at the continued excellence of the shows. Speculations had previously been rife as to what the Chairman would say relative to the new Chiswick, but the anxious ones will have to exercise a little more patience, as at this juncture Sir Trevor did not consider it desirable to make public all the doings of the Council in this matter, as such a course might tend to render the work more complicated and difficult.

A few other references were made particularly to the severe loss that the Society has sustained by death during 1899, and the continued increase in the number of Fellows was extremely satisfactory. It was pointed out, too, that the balance of £1751 was the largest the Society had ever been able to show as the result of one year's working. The Rev. Geo. Henslow, V.M.H., briefly seconded the motion, which was further supported by Messrs. J. Cheal, R. Dean, V.M.H., and G. Paul, V.M.H. It was then put to the meeting, and carried unanimously.

It is needless to say that Sir Trevor Lawrence, Bart., was re-elected President, Philip Crowley Treasurer, and the Rev. W. Wilks Secretary ere the meeting closed.

germination keep the frame dark by covering with mats till the seedlings appear, then, of course, the covering must be removed. With newly made hotbeds a chink of air ought to be left on the back of the frame, to allow strong heat and moisture to escape, until the bed begins to decline in heat. During cold nights the frame should be covered with rough straw or mats, and in bright weather give a chink of air for a few days to sweeten the atmosphere and prevent the plants from becoming weakly and drawn, but it is seldom that a great volume of air is at any time needed for forced Radishes. The great point is to get them to grow quickly; they will then be crisp and tender. Sutton's Early Forcing and Extra Early Turnip-rooted are excellent for early sowings, these to be followed by Sutton's Earliest Frame.

In nearly all gardens of pretensions forced Carrots are in demand, and Radishes, and these are frequently grown in the same frame. The Carrots are sown in drills 9 inches apart, the Radishes broadcast, and the latter are ready for pulling by the time the Carrots require more room. Radishes may also be sown between Potatoes planted in pits, but where this is done it is necessary to plant the Potatoes deeply, so that no earthing is needed.

Those who are fortunate enough to have spare frames at the end of February should place them in front of a wall on a warm border

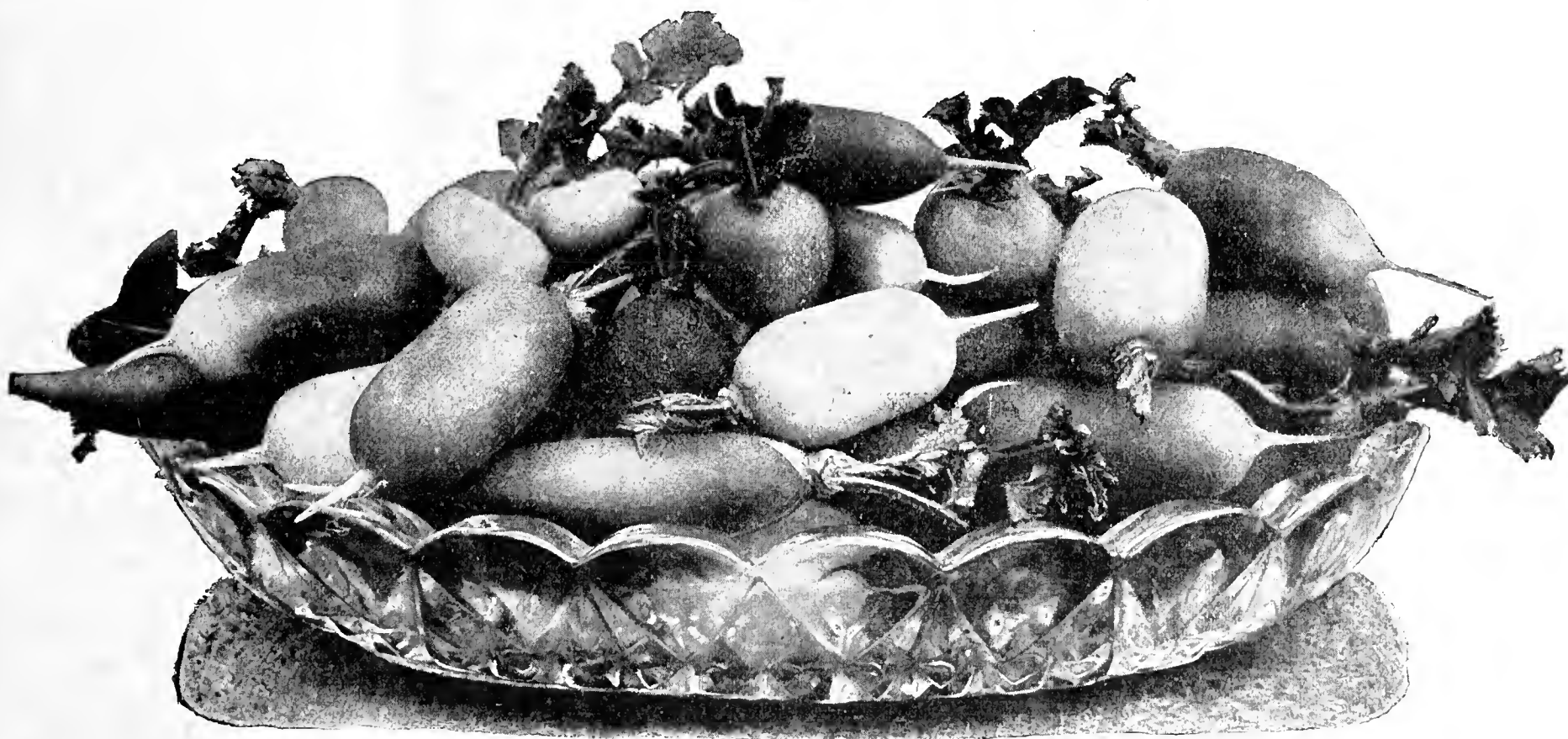


FIG. 36.—A DISH OF RADISHES.

FORCING RADISHES.

RADISHES during winter and spring are always highly prized, and although it is possible to produce them throughout the year, few gardeners grow them in the autumn months, but are content to make their first sowing on a hotbed in December. From that time till the middle of February, in order to secure a continuous supply, it is necessary to sow on a hotbed, for although during seasons when the weather is exceptionally favourable, seed sown in cold frames, or even on warm borders in the open air, will give satisfactory results, it cannot be relied upon, as the roots are often tough and worthless through growing too slowly.

Hotbeds made up in the usual way, by packing in regular layers prepared fermenting materials to a height of 3 or 4 feet, and pacing thereon a frame covered with lights, answer well for Radish forcing. The lights should have a sharp slope from back to front, in order to catch every possible ray of sunshine—an important matter in regard to the forcing of all crops. Light rich soil is necessary to grow Radishes well; this may sometimes be found in the ordinary garden soil, in others it has to be specially prepared. Soil which has previously been used for Cucumbers or Tomatoes, if further enriched with thoroughly decayed and sweet hotbed manure, answers admirably if passed through an inch sieve to remove the rough parts, which if left would impede the progress of long-rooted Radishes. For the Turnip-rooted section a 6-inch layer of soil is ample, but an additional 3-inch layer ought to be employed for the long-rooted types.

The seeds should be sown broadcast, be just covered with fine soil, and the bed then receive a thorough watering. In order to hasten

and sow Radishes in them. So treated the crop will be ready for pulling considerably in advance of sowings made in the open air. Rough planks may also be pressed into service to afford slight protection. These a foot in width are suitable. Arrange them to form the edges of a frame, secure in position by stakes driven into the ground, and at night cover with mats or oiled canvas. Market growers often make a sowing from the middle to the end of February, according to the weather, and when the seedlings appear they are covered with straw, hay, or bracken during frosty nights, and the covering is left on during the daytime occasionally if the weather is frosty. By following this plan they are able to place Radishes on the market at dates which surprise most people when told such produce has been grown in the open air. Light blackish looking soils are peculiarly adapted for growing early Radishes, as they absorb heat, and being thoroughly stored with plant food there is a reserve for the crop to draw upon whenever rapid growth is made under the influence of bright sunshine.

Those who require only a limited supply of early Radishes should sow in boxes 9 inches in depth, and put in a vinery or Peach house just started, or a temporary bed might be formed by placing a few inches of fine soil on the border. From the middle of March till August sowings ought to be made once a fortnight in the open air; then if due attention is paid in regard to watering, satisfactory results are certain to accrue.—H. D.

[For the excellent photographic reproduction (fig. 36), representing in an attractive manner a dish of Radishes, we are indebted to the courtesy of Messrs. Sutton & Sons, Reading, whose selections of this much appreciated salad stand so high in the estimation of connoisseurs.]

FRUIT PRODUCTION—DRYING PLUMS.

A TRULY admirable article is that on page 91. Your versatile correspondent "A. D." touches on various points in a thoroughly practical way, and brings to bear on them a goodly share of that invaluable element, common sense. Whether his concluding proposition is such an important essential as he suggests is a matter on which all persons who are interested in the subject of our home fruit supply will not, perhaps, be equally agreed, at least if he means to say that nothing really worthy of meeting the exigencies of the case will be provided until his plan is carried out in its integrity. A "big" conception indeed it is, but if we wait for its realisation we shall only, it is to be feared, be opening the door still more widely to Californian, Continental, and other fruit growers and dealers to make up the deficiency of our home supplies; still there stands the great educational idea worthily registered in the *Journal of Horticulture*.

NURSERY TEACHING.

Nothing is more true than the scarcity of men who possess the requisite qualifications for managing successfully large undertakings for supplying our markets with fruit of the first quality and in varied forms that shall at once be profitable to producers and satisfactory to consumers. Men of the stamp required cannot be taught in nurseries where trees are raised for other persons to grow and deal with the fruit they may bear. Instruction in budding, grafting, and the formation of trees in their infantile state can be acquired in those establishments, but that is merely touching the fringe of the subject as regarded in its entirety, and with the varied eventualities which must be anticipated and provided for.

SCHOOL AND COLLEGE TEACHING.

Nor can men or women of little or no experience be adequately taught what is requisite to be known on the important industry in question in any schools or colleges at present established in this country. It is true that some of the scientific teachers in such establishments may, by gleaning from books and picking up hints from practical men, formulate theories and lay down general principles more or less sound; but their training does not fit them to be efficient teachers on an essentially practical subject of the important nature indicated.

TRAINING STATIONS.

There may be a few young fruit trees in the grounds attached to some educational institutions, and when these trees are in the hands of skilled cultivators useful lessons can be derived from them in a preparatory way. There are small fruit stations belonging to some of our County Councils, and though these may be of great service locally to owners of private gardens, they are quite inadequate for extensive commercial work such as "A. D." has in view. A good deal was heard at one time about the Duke of Bedford's experimental fruit farm, or whatever it is, and it is to be hoped there is much valuable practical information in store. What little has been published in the gardening Press so far has been of no real service to workers. Gathering, counting, and weighing the leaves, and shading trees with canvas blinds are, from the commercial fruit grower's point of view, mere puerilities, and can only prove, if they prove anything, what has been known for years by experienced men. Almost any amount of money may be spent in proving facts which have long existed. The real substantial want of the times is the demonstration of methods of obtaining the greatest value in fruit from cultivated trees at the least outlay in producing it.

SCHOOLS OF PRACTICE.

Viewing the industry of market, or commercial, gardening broadly, or as embracing the cultivation of fruits, vegetables, and flowers in the open air and under glass, there are no doubt many hundreds of persons who have solved the problem above stated, and some of them in consequence made little (or great) fortunes. Where did they gain the experience that enabled to do so? Can a solitary instance be quoted where it has been obtained by theoretical or scientific teaching alone or mainly? Without any attempt, or desire, to undervalue such teaching, the fact has still to be recorded that nine out of ten, or ninety-nine out of a hundred, of our most brilliantly successful men in any, or all, those occupations, have derived the knowledge that made them what they are from the stern school of practice. The fruit growers of Kent and Hereford, the Grape, Cucumber, Tomato and flower growers of Herts and Sussex, and the vegetable growers of Middlesex, have taught each other, so to say, on the land and in the market, nowhere else, and there are no better or more successful growers in the world than they.

NATIONAL AND COUNTY STATIONS.

If "A. D." were not very much of this opinion he would scarcely have advocated such a large and comprehensive national school of practice as the one referred to of 200 acres with all necessary equipments for carrying out the objects in view. But who is to found it? No society is strong enough to do so. The Government, according to all past history and present prospects, will not do so, and it would be little short of a miracle if any combination of County Councils could be

effected to carry out any such great central scheme. Whether in lieu of several small educational fruit plots in various districts it would not be better to have one large county station is a matter worthy of consideration, if it has not already been considered. From a commercial point of view, or as affording experience for training fruit farmers and purveyors an area of ten acres with all necessary accessories would obviously possess advantages which must be lacking in small experimental plots, while these might be the more useful to a greater number of private growers who could attend and derive practical lessons from them. If twenty counties were to provide areas of ten acres this would be equivalent to the 200 acres suggested. The difficulty in establishing them on this divisional system would be reduced, while it is not improbable the benefits derivable would be increased. But to be of real and actual service a thoroughly sound practical man should have control and be unshackled by a straight laced scientist, who might easily waste both time and money in experiments for his own information and gaining knowledge already possessed by an experienced cultivator. Though competent men are scarce there would not be much difficulty in finding ten or even twice that number by the offer of adequate remuneration.

WORK AND WIN.

Still, in the matter of increased cultivation of fruit for the ever increasing multitude of consumers, there must be no waiting for even the county training grounds propounded. They may never come to pass. How, then, is the required experience to be obtained? It must be had in the same way as those who possess it now obtained theirs—namely, by individual effort, close study, intelligent observation, and persevering work. There is no other safe and sound procedure; no quick and easy way of becoming expert in the important work in question, though an increasing number of people appear to think there is.

A POPULAR FALLACY.

"Where can I send my son for a year to learn fruit growing?" is a common question in these days. If the information is not given you are as likely as not to be regarded as a churl, and hear some such observation as this: "Well, you can at least tell me of some school where fruit growing is taught, or of a few lectures that my son could attend." If this compels a further reply of "No, the subject cannot be sufficiently learned by such means to justify expenditure on land and trees," he will, as a last effort, ask for the names of "cheap books." These you are glad to give, and thus get rid of him. It is difficult to know what to do with such people, who appear to think that everything that is necessary to be known about fruit culture for profit can be "picked up" in a few short lessons. A greater fallacy could not take possession of the mind of man.

DRYING PLUMS—"GLUTS" AND FAILURES.

I have so far said nothing about Plums for drying, and what little I may venture to say now in further encroachment of space will not be in favour of growing them for that purpose. There are some things in which we can excel growers beyond our shores in producing, and some things in which they can excel us. One in which we are extremely likely to come off second best is the prune industry. If we relied on the cheap Plums in "glut" years we should certainly fail, for the simple reason that the fruit from densely overlaid trees consists of little more than water, skin, and stones, and with the water driven out we should have prunes of the worst possible quality. There could be no other result. They would pay no one for drying, as only the lowest of the low prices would be given for them in the buying. Fleishy Plums are requisite for fleshy prunes, and for these to be of the best the varieties must be different from those usually grown in British gardens and orchards.

SEVERAL VARIETIES FOR DRYING.

Some years ago reports of trials in drying Plums at Chiswick were published in some of the gardening papers. Many varieties were tried, and careful note taken of the cost of drying and the value of the fruit after the process was completed. Only one, if I remember rightly, showed a margin of profit, and that was the Fellemberg. This is the Italian prune or Italian Quetsche Plum. It is specially grown on the continent for drying; so are the German Quetsche Plums; also the French d'Agen, Perdrigon Blanc, Perdrigon Violet, and others for the production of first-class prunes. It is doubtful if some of these continental varieties could be grown profitably in England, and such varieties as are now grown could not equal them in a dried state, while much better prices are realised for good samples of ours, green or ripe, for immediate use or preserving. The majority of our soft juicy Plums are not adapted for drying, even in the best condition, and it would be foolish to dry them then, while to dry them when small and "stony," as they are in "glut" years, would surely end in utter disappointment.

THE BETTER WAY.

Much better grow the trees as bushes, and thin the fruits when overcrowded, and then will they, because fine, command a ready sale at remunerative prices. There is always a demand for the "best."—A NOTTS GROWER.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—FEBRUARY 13TH.

THE display in the Drill Hall on Tuesday was a comparatively small one, but this can easily be accounted for by the fact that the weather was most unpropitious. The fog prevented the Orchid growers bringing any specimens to the show.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); and Messrs. J. Cheal, W. Poupart, H. Markham, Jas. H. Veitch, W. Pope, G. Kelf, A. Dean, S. Mortimer, J. W. Bates, G. Wythes, H. S. Rivers, F. Q. Lane, E. Beckett, G. Bunyard, A. H. Pearson, and Rev. W. Wilks.

Mr. W. Poupart, Marsh Farm, Twickenham, sent a splendid exhibit of Rhubarb. The varieties included Linnæus, Victoria, Hawkes' Champagne, and Daw's Champion. The latter is a cross between Victoria and Champagne, and possesses the very desirable attribute of being much finer than Champagne while retaining the earliness of that variety. The colour is very brilliant when in perfection, and as shown was a very bright rose. It is bound to come to the front. The same exhibitor sent splendid Asparagus and Seakale (silver Knightian medal).

About 100 dishes of Apples were contributed by Messrs. G. Bunyard and Co., Maidstone, and needless to say the fruits were almost without exception in splendid condition. Some varieties that are usually over months ago were in a wonderfully sound state. Particularly conspicuous were Calville Malingre, King's Acre Pippin, Tower of Glamis, Bramley's Seedling, Worcester Pearmain, Small's Prince Arthur, Tibbit's Pearmain, Golden Noble, Allington Pippin, Cox's Orange Pippin, Gloria Mundi, Peasgood's Nonesuch, Gascoyne's Scarlet Seedling, Tyler's Kernel, Lord Derby, Newton Wonder, Annie Elizabeth, Hambling's Seedling, Bow Hill Pippin, Blenheim Pippin, Alfriston, Hoary Morning, Preston Hall, and Reinette du Canada (silver-gilt Knightian medal).

Mr. John Watkins, Pomona Farm, Hereford, staged a grand collection of Apples. As usual, the colour was striking, and the whole of the fruits in excellent condition. Good dishes of the following varieties were staged—Beauty of Kent, New German, Mère de Ménage, Rymer, Wadhurst Pippin, Newton Wonder, Hollandbury, Annie Elizabeth, Blenheim Pippin, Blue Pearmain, Gathlin Pippin, and Claygate Pearmain. It is rather unusual to have fifty dishes of dessert Apples staged in February (silver-gilt Knightian medal).

FLORAL COMMITTEE.—Present: C. E. Shea, Esq. (in the chair); with Messrs. C. T. Druery, H. B. May, R. Dean, J. Jennings, R. Fife, C. R. Fielder, J. Fraser, W. Bain, C. Jefferies, H. J. Cutbush, J. D. Pawle, G. Renthe, E. H. Jenkins, J. James, E. T. Cook, H. Turner, C. Blick, H. J. Jones, E. Mawley, J. F. McLeod, and W. Howe.

Messrs. H. Cannell & Sons, Swanley, occupied a table running the length of the hall with a collection of Primulas of The Lady type. The plants were well flowered, and for decorative value at this season would be hard to beat. The varieties included the old type known as The Lady; Pink Lady, correctly described in the name; Fairy Queen, a beautiful variety, white with a pink flush pervading the petals; Miss Irene, a salmon pink; Mrs. H. Cannell, white, a distinct advance on the original type; Queen of Roses, pale rose; Princess Eva, very free white with a faint blush; and Salmon Beauty, a bright rosy salmon. Mrs. R. W. Cannell, of the true fimbriated type, was also good (silver Flora medal).

Messrs. W. Paul & Son, Waltham Cross, arranged a large table of Clematis indivisa and C. i. lobata. The plants were all growing in 5-inch pots beautifully clothed with foliage and a wealth of white star-like blossoms. The decorative value of this climber is not sufficiently acknowledged at the present time. The group was edged with decorative plants of Grevillea robusta (silver Flora medal).

Messrs. J. Laing & Sons, Forest Hill, contributed a welcome exhibit of Palms, Diacanas, and Crotons, which were brightened with well flowered Azaleas, Genistas, Ericas, Lily of the Valley, and Ferns (silver Banksian medal). Cyclamens were well represented by a fine table from Mr. John May, St. Margaret's, Twickenham. The plants were well grown, and the flowers embraced a wide range in colouring. In most cases the flowers individually were very fine, a bright rosy crimson variety being especially noticeable (silver Flora medal). Hardy flowers were staged by Messrs. Barr & Sons, Covent Garden, which included pots of Galanthus Elwesii, Narcissus, Cyclamens, and a sulphur-coloured Hoop Petticoat Narcissus, also a pretty white form. Lachenalias and Primula obconica grandiflora were also staged.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, again demonstrated the value of their hybrid Rhododendrons by staging a beautiful box of cut blooms. The most noteworthy varieties were Multicolor, Neptune, Cloth of Gold, Imogene, Triumphans, Lord Wolseley, and Delicatum. Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Dorking, staged two vases of winter-flowering Begonias; Triomphe de Lorraine, a deep semi-double red of the semperflorens type; and Boule de Neige, a white of the same form. Messrs. F. Sander & Co., St. Albans, exhibited cut blooms of three new Camellias under popular names—Lady Buller, a deep rose, semi-double, with a few white spots; Lady White, white flaked, red; and Lady Roberts, a rosy variety with a good white picotee edge; in all the stamens were prominent. Mr. W. Bull, Chelsea, exhibited a quantity of Primula blooms arranged on a white

paper, certainly not the most attractive way of staging them. Mr. W. Coates, gardener to Col. Platt, Corddiaog, Llanfairfechan, sent some good cut Primulas with their foliage; the flowers were large and of excellent type. Spiræas were staged by Messrs. Van Waveren and Kruyff, Haarlem. The varieties, W. E. Gladstone and H. Witte, were well flowered, but the weather had caused them to droop very much; both are hybrids of S. astilboides.

ORCHID COMMITTEE.—Present: J. Gurney Fowler, Esq. (in the chair); with Messrs. J. O'Brien, C. Maron, de B. Crawshaw, R. B. White, H. Tracy, H. Little, J. T. Gabriel, H. J. Chapman, W. Potter, F. J. Thorne, E. Hill, J. H. Fitt, W. H. Young, T. W. Bond, C. Winn, W. Cobb, and C. J. Lucas.

Orchids were by no means numerous, simply because of the weather that prevailed. There was not a solitary group, the exhibits



FIG. 37.—CLITORIA TERNATEA. (Page 148.)

being composed of single plants or cut flowers. Amongst the exhibitors were Messrs. N. C. Cookson, Wylam-on-Tyne, who showed Calanthes Phœbe (pink), and Sybil (white), Odontoglossum crispum Mundy-anum, and Cooksonianum; Heath & Son, Cheltenham, who staged Dendrobium Fytchianum giganteum, and Cypripedium Lathomianum giganteum; L. Linden, who exhibited Cypripedium Schusterianum, Odontoglossum Ruckerianum rubiginosum, and O. crispum Goliath; W. Cobb, Tunbridge Wells, who sent Lælia anceps Stella and Sanderiana, and Cypripedium Bassano; F. A. Rehder, Gypsy Hill, Cypripedium Faverger; C. J. Lucas, Horsham, Dendrobium macrophyllum Richardi; C. Maron, Lælio-Cattleya Ernesti pallida, and L.-C. Bertha Fournier var. splendida; R. Brooman White, Ardarrach, a splendidly formed Odontoglossum triumphans, with other Odontoglossums; and Captain Holford, Cattleya Trianae, Westonbirt variety.

CERTIFICATES AND AWARDS OF MERIT.

Lælio-Cattleya Bertha Fournier, var. *splendida* (C. Maron).—This variety is superb. The magnificent lip is rich velvety crimson

flushed with purple. The sepals and petals are rich rose (first-class certificate).

Odontoglossum crispum Mundyannum (N. C. Cookson).—This is a superb variety; the flower is round and the organs of great breadth and substance. The colour is white with immense chocolate brown, there being also blotches of similar colour. The lip is fringed with red brown markings (first-class certificate).

Rhubarb Daw's Champion (W. Poupart).—This is a variety that must become immensely popular for forcing and general purposes (award of merit).

THE YOUNG GARDENERS' DOMAIN.

RHUBARB.

FEW vegetables force more readily than Rhubarb, provided strong, well ripened crowns are obtained at the outset. For the earliest supply a few roots should be lifted and placed in a Mushroom house, warm pit, or even a cellar, while a succession may be maintained by forcing on the plantation in the old fashioned way with tubs packed round with fermenting material, composed of long stable litter and leaves. Where the roots are well established large quantities of stalks will be produced, but as soon as the crowns show signs of weakness the tubs and forcing material must be removed, and the ground made neat and tidy by forking between the rows.

As has been said, the forcing of Rhubarb is very simple where good crowns are at command, and to produce these is an all-important operation. The position of the Rhubarb plantation is frequently in an out of the way situation, shaded by trees. Such a position is altogether unsuitable, as this plant revels in highly cultivated and properly enriched soil; farmyard manure dug in during the autumn is most advantageous. The planting should be left until the early part of March, then stations ought to be made 2 feet apart and sufficiently deep to avoid crippling the roots in planting; a space of 3 feet between the rows must be allowed. The soil should be well worked round the roots, the crowns being just buried; the surface may then be afforded a mulch of short stable manure, which can be forked in at a later date. The stalks must not be pulled the first season, as this weakens the plants.

Propagation can be carried out either by division of the roots or by procuring seeds, and the former, I think, to be decidedly preferable to the tedious operation of raising roots from seeds to form plantations. The varieties usually grown in gardens are Royal Albert, an early one, also Paragon, both of these are superb colour, and Victoria, an excellent robust growing Rhubarb, is a great favourite for general purposes.—F. W. G.

EARLY STRAWBERRIES.

To obtain good runners for forcing, young stock should be planted at the latter end of August or the beginning of September. A good plan to adopt for this is to have the rows alternately 2 feet and 18 inches apart, and the plants in the rows 12 inches asunder, thus giving plenty of room when layering takes place, to stand the pots between the rows that are 2 feet apart, while the others will answer for watering. During the growing season keep the border free from weeds by hoeing between the rows occasionally, and if the weather become very dry an occasional watering will considerably benefit the plants. Remove the flower stems as they appear, and any plant that is not showing bud should be plainly marked, and if on a second inspection it still fails to flower it should be thrown away.

About the first week in July layering must commence, and prior to this all preparations should have been made, such as getting the compost ready and the pots cleaned. The soil may consist of loam, Mushroom bed refuse, and a little lime. Some growers prefer layering in the fruiting pots, but as there is a danger of the soil destitute of roots becoming sour, I think the small size is better. The pots must stand level to facilitate watering when required, and the runners should be secured to the soil in the pots, either by pegging or a small stone, to keep them in place until roots have formed. When the layers are rooting through the bottoms of the pots, they should be detached from the old plants and stood in a rather shady place.

When this stage is reached preparations must be made for putting the plants in their fruiting pots. They can be potted in two sizes, 5 inch for the earliest ones and 6 inch for the later varieties. Have the receptacles thoroughly cleansed and well drained, and a little soot placed on top of the crocks to prevent worms from getting into the soil. The compost must be prepared, and if the loam is in any way dry it should be thoroughly watered a few weeks before potting commences. The mixture may consist of loam cut or broken into pieces; Mushroom bed refuse, a little lime, some suitable fertiliser, and a dash of bonemeal can be added. Judgment should be exercised as to the quantity of Mushroom bed refuse, as the loam varies so much in texture that exact proportions cannot be given.

Let the potting be firm, using a rammer to attain this end, and have the base of the crowns just level with the soil when finished. The pots should be filled to within half an inch of the rims, as this will leave room for watering. After potting the plants should be stood in a rather shady position for a few days, to give them a better oppor-

tunity to make fresh roots than would be the case if they were in the full sun; also give each one a thorough watering. A good place to stand the pots while the plants are growing is on walks where they can get the full benefit of the sun. Watering must be carefully done, only giving to those that require it, and it will benefit the plants if they are syringed in the evenings after hot days. Remove all weeds and runners as they appear.

The plants that are potted for the earliest forcing should have one crown, while the later ones may have two; all surplus crowns ought to be removed in the early stages. As the winter begins to appear preparations should be made for protecting the plants against the heavy rains, snow, and frost. The best plan to adopt, if the room can be spared, is to stand them closely together in frames, where the lights can be taken off or put on at discretion. Where there is not sufficient space for this the pots should be stacked one on the other on their sides, and ashes placed between them. Do not let the plants become thoroughly dry, or, on the other hand, very wet.—P. R.

(To be continued.)



HARDY FRUIT GARDEN.

Planting Fruit Trees.—When the autumn planting of fruit trees is impracticable, or having been commenced could not be completed, the work may be carried out now. The chief essentials are a comparatively dry condition of the ground, and the soil previously well prepared and in the condition which insures its working properly. The majority of fruit trees are still inactive, but in a very short time buds will be bursting and the roots will be originating new fibres. It is therefore advisable to plant as soon as possible, especially in the case of trees which have to be purchased.

When trees are received for planting it is a most important matter to lay the roots in the ground without delay, as exposure of the fibres is very injurious, and renders a fresh start somewhat difficult. Should the roots be very dry it will be advantageous to plunge the trees in water if the weather is mild, leaving them for a day or two, then lay the roots in soil to await planting. When the trees arrive in frosty weather it is best not to unpack them, but lay them in a cellar where frost does not reach until the weather breaks.

Forms of Fruit Trees.—The forms of trees best adapted for the position must be chosen. Standard trees are only suitable for large plots. Pyramids and bushes are adapted for more restricted spaces. Fan-trained, horizontally trained, and cordons are specially suitable for wall culture.

Distances for Planting Fruit Trees.—The form of tree and the stock upon which it is worked regulate the distance of planting. Standard trees of Apples and Pears for large plots may be planted 30 feet apart. The former are on the Crab stock, and the latter on the Pear stock. Pyramid and bush Apples on the Crab stock, and Pears on the Pear stock, make large and vigorous trees, hence must be planted 12 feet apart. The same forms of trees with Apples on the Paradise stock and Pears on the Quince stock only require 6 feet space between. They may be closer together than this if lifted and root-pruned. Horizontally trained wall trees may be 15 feet asunder; fan trained trees the same distance. Upright or oblique cordons of Apples and Pears should be 2 feet apart. Single cordon Gooseberries and Currants may be a foot apart.

Preparing the Holes for Planting.—The proper position for planting having been fixed, excavate the soil and form a shallow wide space for the reception of the roots, as it is important that they be spread out to their full extent. The centre of the hole may be raised rather higher, making a slightly convex mound.

Pruning the Roots.—Before the trees are planted finally the whole of the roots must be examined, and those which have been torn or injured in the process of lifting must be pruned to healthy portions, making slanting cuts from underneath upwards with a sharp knife.

Planting.—Some fine soil ought to be at hand for spreading over the roots. It may consist of good loam mixed with dry wood ashes or burnt refuse. Place the tree in position and spread out the lower layer of roots, and secure them in their proper direction by sprinkling soil over them from the stem outwards. The next layer of roots may be treated the same until all are securely fixed, the upper layer being covered 3 or 4 inches.

Staking and Mulching.—The standard trees ought to have stakes placed to them as soon as planted, and be secured with some soft ligatures which do not injure the bark. Sacking or strong cloth wrapped round the stem is the best, and the whole made properly fast with pliable copper wire. Mulch the soil over the roots with littery

manure. Heavy solid manure is not required, as it tends to keep the soil cold in spring, whereas it should be able to receive the warmth of the spring sunshine. Also attach the proper names to each tree as planted with some legible permanent labels.

Planting Bush Fruit.—Where it is intended to plant Gooseberries and Currants the work ought not to be delayed, as they will shortly be pushing into growth. Liberally manured and trenched ground should be prepared. Two or three-year-old bushes may be planted at a distance of 6 feet apart. Single cordons for walls or fences should be inserted a foot asunder. Those which are to be trained to three stems must be 3 feet apart. Black Currants are only grown as bushes because of the necessity of taking the crop from shoots of the previous year. It is not profitable to grow Black Currants as cordons, or to subject them to the same course of pruning as is accorded to Red Currants.

Japanese Wineberry.—This hardy fruit-bearing shrub bears small red fruit of a useful character. The shoots may be trained to a trellis, similar to Raspberries. The pruning consists in cutting away the previous year's shoots that have borne fruit, retaining the young growths, which may be shortened to 5 feet or less. The plants require full exposure in a sunny part of garden, and should be planted in soil of a rich character, freely mulched with manure in summer to maintain the ground moist and cool. Liquid manure is also of assistance in encouraging strong growth.

FRUIT FORCING.

Cherry House.—The trees started in December and forced before will be going out of flower, and the fruit having set may have the night temperature slightly advanced. Trees started at the new year and forced for the first time are rapidly unfolding their buds. Before the flowers expand the house should be fumigated, as aphides are almost certain to be present, but the fumigations must be done carefully, or the blossoms will be more or less injured. Keep water from the blossoms, but secure a genial atmosphere by damping the paths and borders occasionally.

Peaches and Nectarines.—*Earliest House.*—The trees must be syringed every morning and afternoon during sunny weather to check red spider. If, however, the weather be dull the syringing must be practised early in the afternoon, so that the trees may become fairly dry before night, or if that does not take place the afternoon syringing ought to be dispensed with, damping the paths and borders instead, as keeping the trees dripping with water through the night causes weak growths and thin foliage. Continue disbudding, taking care to leave a growth at the base of each bearing shoot and another at its extremity, or at least level with the fruit. The shoots retained for attracting the sap to and supporting the fruit should be stopped at the third leaf, but the basal shoots must be trained to take the place of those now bearing fruit. The growths on extensions must be left 12 to 15 inches distance apart to form the bearing wood of the future and for framing the trees. Ventilation must be carefully done in severe weather, avoiding currents of cold air. When the fruit is the size of small marbles thinning may proceed. Water inside borders as required, using liquid manure, which will assist the trees in swelling the fruit, especially in the case of weakly trees long subjected to forcing. Healthy trees will not require any active stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process.

Second Early House.—Trees started early in January have the flowering rather prolonged in consequence of the somewhat inclement weather, and fertilisation may still be practised, brushing the flowers, or distributing the pollen by shaking the trellis. Admit air on favourable occasions, freely when the external air is mild, avoiding cold currents in severe weather, and providing a little ventilation constantly at the top of the house. The night temperature should be maintained at 50°, and 5° less on cold nights, 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise to 65° without a free circulation of air. Syringe the trees when the flowers fade, but only moderately, as excessive moisture facilitates wood growth more than the development of the fruit. The moisture will assist the fruit to throw off the remains of the flowers. In dull weather a genial condition of the atmosphere may be secured by damping the surfaces rather than the trees in the morning and early afternoon, an occasional syringing early in the day sufficing to keep red spider in check.

Houses Started Early in February.—The trees are now coming into flower. Syringing over them must cease—indeed, it should be discontinued when the blossoms show colour. Nevertheless, maintain sufficient moisture by damping the paths and borders two or three times a day as weather may be advisable, avoiding a close stagnant atmosphere. If the flowers are numerous, thin them by rubbing off those on the back or under side of the trellis, which will strengthen the remainder. Examine the trees closely, and if there are any aphides fumigate with tobacco or vapourise with nicotine, so as to destroy them before the flowers expand. Continue the temperature at 40° to 45° at night and 50° by day, above which ventilate freely. When flowers expand raise the temperature to 50° at night, 55° by day artificially, and 60° to 65° from sun heat, with free ventilation. On cold nights the temperature may fall to 45° or even 40°, also 50° by day in dull cold weather, allowing a little ventilation constantly at the top of the house.

Strawberries in Pots.—The earliest forced plants will need the fruit supporting by forked twigs of Birch thrust into the soil, the stem of the truss being placed in the fork, so that the fruit hangs clear of the pot or soil. It will thus acquire colour and quality better, and be in less danger of damping. Later plants having the fruit fairly set will need attention in removing all deformed fruits, leaving the most promising and in number proportionate to the vigour. The swelling must be aided by copious supplies of liquid manure. The temperature should be 60° to 65° at night, 70° to 75° by day, with gleams of sun and moderate ventilation, advancing 5° to 10° on bright days. Avoid drying currents of air, as they injuriously affect the swelling of the fruit. Examine the plants twice a day for water, giving it only to those in need of a supply, and always so as to moisten the soil through the drainage. Keep successional plants free from aphides, taking care to have them quite clean by the time the flowers open. British Queen and other late forcing varieties may now be introduced, at the same time starting proportionate quantities of the midseason or second early varieties, such as Sir Joseph Paxton, to maintain the succession of fruit.

THE BEE-KEEPER.

CHANGING FLOOR BOARDS.

WE have always advocated the use of loose floor boards to hives, and though our stocks have increased in number, entailing more work in the apiary, we do not begrudge the time occupied in changing the floor boards as often as may be considered necessary. It is important that this matter receive due attention at this season, when rain, sleet, or snow is of daily occurrence, as however carefully a hive may be made there is often an accumulation of moisture on the floor board. This is usually found at the corners of the hive.

The plan we adopt is to have all our hives of the same size. The floor boards are thus interchangeable, and as we always have some extra ones on hand there is no difficulty in finding a dry board when required. We have recently placed dry floor boards to the majority of our hives. It was not all done at once, but a few minutes sufficed to do half a dozen hives, the number of dry boards we had in readiness. The dry board was first placed on the stand by the side of the hive, which was lifted bodily with both hands and placed on it. The original board was removed and the hive placed in position. This was continued from one end of a long row of hives.

The floor boards thus removed were thoroughly cleaned and dried, and were then used for other hives, an operation which takes up much less time than some bee-keepers would imagine, and adds greatly to the well-being of the bees. If the floor board is fixed to the hive it is impossible to attend to them in this manner, as it would not be advisable to remove the combs and disturb the bees at this season, although in many instances if such hives were examined they would not be found in a satisfactory condition.

REDUCING ENTRANCES.

After the spell of changeable weather, with little sunshine a higher temperature will probably prevail. Bees will be continually on the wing, and breeding will commence in strong colonies. It will, therefore be advisable to reduce the entrance to all the hives, so as to keep them as warm as possible. As we have stated in previous notes, the whole of our hives have their entrances left fully open throughout the winter. At this season, however, we reduce them to 1 inch or less. It is a good plan to do this after dry floor boards have been given to each hive, they will then not require removing until the spring is advanced, when a thorough overhaul of all the hives may be made.

There is another reason why the entrance should be reduced during the spring months, not only for warmth, but to prevent robbing. If there is a weak colony, and it will always be found that some stocks are stronger than others at this season, it will be attacked and all the stores removed before the bee-keeper is aware of it. The bees stand no chance if the entrance is fully open, but when it is reduced so that only one bee can pass at a time they are able to protect their stores, and probably by midsummer they will be in as good condition as the colony, which at this season appeared so much stronger.

On removing the floor boards a great difference will be found in them. Some will be quite free of dead bees, whereas others will have numerous dead bees nearly blocking the entrance. This will arise from a variety of causes, but it is more often observed after a long spell of cold dull weather, when the bees have been confined to their hives for several weeks.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Atlee Burpee & Co., Philadelphia.—*Wholesale Seed List.*

W. Clibran & Sons, Market Street, Manchester.—*Seeds, Chrysanthemums.*

Dickson, Brown, & Tait, Manchester.—*Farm Seeds.*

J. Forbes, Hawick.—*Florists' Flowers.*

A. Roozen & Son, Overveen, Haarlem.—*Bulbs and Seeds.*

Sutton & Sons, Reading.—*Farmers' Year Book.*



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

The Onion Maggot (*F. W. R.*).—It is difficult to prevent the attacks of the Onion maggots. The insects pass the winter in a pupa state in the ground, and in this form are so well protected by their cases that it is not easy to destroy them. Ammoniacal liquor from gasworks, and solution of paraffin, of the strength of an ounce of oil to a gallon of water, and poured over the ground, are more or less effective, and also act as manure. It is well to have Onion beds as far distant as possible from where the crops were last grown and attacked. It is a good plan also to dig the ground deeply a day or two before sowing, as then many of the pupa cases are placed so far below the surface that the flies cannot readily emerge from them, and thus deposit eggs for producing future crops of maggots. Very heavy dressings of lime and soot are also advisable before sowing. Deep drills drawn and filled with wood ashes, and in these sowing the seed, is a method that has been successfully adopted by some cultivators. Plants raised in boxes under glass and transplanted often escape injury by the enemy.

Clitoria ternatea (*W. Raby*).—This belongs to the Leguminosæ, and is a handsome blue flowered plant. It is seldom seen in gardens, and yet the brilliant colour of its flowers ought to render it a general favourite. According to Paxton "this handsome plant was first brought beneath the notice of botanists and floriculturists as long ago as the year 1739. From that period down to the present it has been erroneously considered by many as an annual species, and slighted accordingly. Such an opinion probably had its rise in the mode of culture which has occasionally been pursued. Instead of treating it as a stove plant, it was, from the facility with which it ripens seed, raised anew each spring as a half-hardy annual, and transferred to the open flower border, where it was destroyed by cold. "From circumstances similar to the above, this plant has not been an isolated example of false notions being imbibed respecting its habits. Notwithstanding the evident bent of cultivators rather to supply a plant with too high a temperature than to suffer it to be too much exposed, here is an instance, out of several others that we might mention, in which a contrary method has been practised. When, on the other hand, it is retained in a stove, to which a moderate amount of heat is furnished, it assumes quite another appearance. The stems, instead of perishing yearly, become shrubby at the base, the lower leaves remain through the winter without withering, and it is the upper branches alone that exhibit any signs of decay. Its natural habit is, therefore, decidedly suffruticose, and that to which it has been reduced in our gardens is simply a constrained one."

Taking Cuttings of Laurels (*Mrs. S.*).—The latter part of September is the most favourable season for this operation, as the cuttings then have time to callus before the sharp weather sets in, and are thus prepared to emit roots early in spring. We have frequently inserted many thousands of cuttings at the time named, usually the last week in September, and had plants fit for transplanting the following season, either further apart or into permanent positions. The cuttings, 9 to 12 inches in length, should have a heel of the two years' wood, say a couple of joints, have the leaves trimmed off half the length, and be inserted two-thirds of the length of the cutting in the soil, firming the ground well, but not excessively about them. The cuttings may be placed in rows 1 foot apart and 6 inches asunder in the rows.

Growing Ixias (*A. B.*).—Ixias are not particularly difficult to grow in pots. The bulbs should be potted rather firmly in sandy loam and leaf soil in October, placing about half a dozen in a 5-inch pot, and covering with an inch of soil. The pots ought to be stood on and plunged in ashes or cocoa-nut fibre refuse in a cold frame, and if the soil was moist when used little water will be required during the winter. When the flower spikes appear more water may be given, affording the plants plenty of light and air, but avoid cold cutting draughts. They may be moved to the greenhouse after they are advanced for flowering. After flowering growth should be encouraged by watering for a time; but that complete, gradually ripen them off, and after the leaves decay they should be kept dry until autumn, when they may be shaken out and repotted.

Clay and Cow Manure for Grafting (*D. F. J.*).—We consider this as good as ever for the purpose, the clay having been beaten into a paste with about half the quantity of cow manure and horse droppings. Some amateurs do not care to go to so much trouble in preparing the pigment. Grafting wax is the simpler process, but it costs money, whereas grafting clay entails no outlay in many cases but the labour, and amateurs have often to consider ways and means. The following recipes, taken from "Profitable Fruit Growing," are excellent for preparing grafting wax:—"1, To be used warm. Resin, 8 parts; tallow, 3 parts; red ochre, 3 parts; Burgundy pitch, 1 part. First melt in an iron pot the resin, add the tallow, and lastly the red ochre; stir well together, but do not make nor use too hot. 2, To be used cool. Equal parts of yellow wax and turpentine, with half as much Burgundy pitch as either, and half as much mutton suet as pitch. Melt all together, mix thoroughly, leave them to cool, then form into small balls, and use when required. The object of grafting wax is to exclude air, and if any cracks appear they must be promptly filled, leaving a smooth surface."

Artificial Manure for Early Potatoes to be Followed by Celery (*J. F. A. B.*).—Rape seed meal (oil extracted), 6 cwt.; bonemeal (4 per cent. ammonia and 45 per cent. phosphate of lime), 3 cwt.; sulphate of potash (97 per cent. purity) 1 cwt., mixed, per acre, would be a suitable fertiliser for a light soil with a subsoil of gravel. Muriate of potash would act more quickly, but it is not wise to use it in spring on land containing lime, as there is a liability to form chloride of that element, similar remarks applying to kainit. Something will be left over for the Celery, though we suppose you will employ manure in the trenches for this crop, and a little nitrate of soda sprinkled along the side of the plants in the trench will give them a start, but it must not be used after August or early September. Soot also is an excellent fertiliser for Celery. The Celery crop will certainly tend to deepen the soil or rather loosen it for the proposed following on with Asparagus, manuring for this with Mushroom bed refuse.

Preparing Ground for Asparagus (*Idem*).—The formation of an Asparagus bed from Mushroom bed refuse, according to our instructions in your particular case—namely, bastard trenching the ground, putting the manure in the bottom spit, which was simply dug in with a fork, is correct, more manure being mixed with the top soil. It is immaterial whether you fork over the beds or not before planting, though it would not do harm, and would perhaps do good, by mixing the manure better or more evenly through the soil. It is not essential to bring some manure to the surface, though we have found it excellent practice to mulch the bed after planting with about an inch thickness of rather fresh manure. The planting of yearling plants 2 feet apart each way—that is, in rows 2 feet between and 1 foot from the sides of the alleys or bed, this being 4 feet wide, is proper to produce fine heads. If desired to have early returns the plants may be a year older, some plants being weak at one year old, though others are quite as strong as thickly grown two years old. A row of early Potatoes may be taken in the "gangways" or alleys between the beds, or, if you prefer, Cauli-flowers. It would hardly do to plant Dwarf Kidney Beans on the beds between the Asparagus plants, though we have practised it. If you adopt the plan we should recommend Ne Plus Ultra Bean. The point is not to have the Beans so thick as to crowd the Asparagus, secure the crop and remove the plants as soon as possible, so as not to prejudice the second growth of the permanent crop.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh

grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. E. W.).—1, *Garrya elliptica*; 2, *Spiraea palmata*; 3, *Thuiopsis dolabrata*. (M. G. C.).—1, *Cypripedium Spicerianum*; 2, *C. villosum*; 3, *Cattleya Trianae*; 4, *Euphorbia splendens*; 5, *Ficus repens*. (Inquirer).—1, *Grevillea robusta*; 2, *Anthericum variegatum*; 3, *Ophiopogon Jaburan variegatum*; 4, *Freesia refracta alba*; 5, *Odontoglossum crispum*, poor variety. (P. A. J.).—*Cyperus nepalensis*; *Cypripedium insigne* Maulei.

COVENT GARDEN MARKET.—FEBRUARY 14TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	3	0 to 7	Lemons, case	4	0 to 15
" Canadian, barrel ...	10	0 15	Melons each	0	6 1 6
" Nova Scotian, barrel	10	0 17	Oranges, per case ...	5	0 15
Cobnuts per 100 lb....	60	0 70	" Tangierine, box...	0	6 1 9
Grapes, black	1	6 4	Pears, Californian, case...	6	0 9
" Muscat... ..	2	0 5	Pines, St. Michael's, each	1	0 6

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	6	0 to 0	Herbs, bunch	0	2 to 0
Asparagus, green, bundle	5	0 5	Leeks, bunch	0	3 0
" giant, bundle	15	0 20	Lettuce, doz.	1	6 2
Beans, Jersey, per lb. ...	2	0 2	Mushrooms, lb....	0	6 0
" French Kidney, lb.	1	6 0	Mustard and Cress, punnet	0	2 0
" Madeira, basket ...	2	0 2	Onions, bag, about 1 cwt.	4	0 4
Beet, Red, doz.	0	6 0	Parsley, doz. bunches ...	2	0 4
Brussels Sprouts, ½ sieve...	1	6 2	Potatoes, cwt.	2	0 5
Cabbages, per tally ...	7	0 0	" Tenerife, cwt....	18	0 28
Carrots, per doz.	2	0 3	Seakale, doz. baskets ...	12	0 15
Cauliflowers, doz.	2	0 3	Shallots, lb.	0	3 0
Celery, per bundle	1	0 1	Spinach, per bushel...	3	0 5
Cucumbers, doz.	4	0 8	Tomatoes, per doz. lbs. ...	6	0 8
Endive, doz.	2	6 0	Turnips, bunch... ..	0	3 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2	0 to 3	Maidenhair Fern, doz. bnch	8	0 to 10
Arums	6	0 8	Marguerites, doz. bnchs.	3	0 4
Asparagus, Fern, bunch...	2	0 2	" Yellow, doz. bnchs.	4	0 6
Bouvardia, bunch	0	6 0	Mimosa, per bunch	1	6 2
Carnations, 12 blooms ...	2	6 3	Mignonette, doz. bunches	6	0 8
Cattleyas, per doz.	12	0 24	Narcissus, white, doz. bun.	2	0 3
Christmas Roses, doz. ...	1	0 2	" Yellow, doz. bunches	3	0 5
Chrysanthemums, white			" double, doz. bunches	2	0 4
doz. blooms	6	0 9	Odontoglossums	5	0 7
" yellow doz. blooms	5	0 8	Pelargoniums, doz. bnchs	8	0 12
" bunches, var., each	1	6 3	Poinsettias, doz.	12	0 18
Daffodils, double, doz. bnch	8	0 10	Roses (indoor), doz....	6	0 8
" single, doz. bnch.	6	0 12	" Red, doz.	6	0 8
Eucharis, doz.	8	0 10	" Safrano, packet ...	3	6 4
Gardenias, doz.	6	0 8	" Tea, white, doz. ...	3	6 0
Geranium, scarlet, doz.			" Yellow, doz. (Perles)	5	0 7
bnchs.	6	0 9	" Maréchal Niel, doz.	6	0 12
Hyacinth, Roman, doz. ...	6	0 8	Smilax, bunch	5	0 7
Lilium Harrisii, 12 blooms	6	0 8	Tulips, scarlet, bunch.....	0	6 0
" lancifolium album ...	3	6 4	" yellow, bunch	1	0 1
" rubrum	3	6 4	" bronze, bunch	1	0 1
" longiflorum, 12 blooms	8	0 10	Violets, Parma, bunch ...	4	0 6
Lilac, white, bundle ...	4	0 6	" dark, French, doz.	2	0 3
" mauve, bundle ...	4	0 8	" " English, doz.	2	0 3
Lily of the Valley, 12 bun.	9	0 18			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6	0 to 36	Ferns, small, 100	4	0 to 8
Arums, per doz.	18	0 24	Ficus elastica, each ...	1	6 7
Aspidistra, doz.	18	0 36	Foliage plants, var., each	1	0 5
Aspidistra, specimen ...	15	0 20	Lily of Valley, per pot ...	1	0 2
Chrysanthemums, each ...	1	0 4	Hyacinths, Dutch, doz. ...	10	0 18
Crotons, doz.	18	0 30	Hyacinths, Roman, per pot	0	8 1
Cyclamen, doz.	8	0 12	Lycopodiums, doz.	3	0 6
Daffodils, pot	1	0 1	Marguerite Daisy, doz. ...	12	0 15
Dracæna, var., doz.	12	0 30	Mignonette, doz.	8	0 12
Dracæna viridis, doz. ...	9	0 18	Myrtles, doz.	6	0 9
Erica various, doz.	30	0 60	Palms, in var., each ...	1	0 15
Euonymus, var., doz. ...	6	0 18	" specimens	21	0 63
Evergreens, var., doz. ...	4	0 18	Poinsettias, per doz. ...	15	0 20
Ferns, var., doz.	4	0 18	Solanums per doz.	9	0 18

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. — *Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY. — *Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND. — *Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.



HOW TO SATISFY THE MALTSTERS.

BREAD is the staff of life, Barley the body of the beer, and it is a provoking and aggravating thing to see English beer which has not an English body; in other words we wish to see malt made from our own Barley rather than from that of our continental growers. Well, but the big brewers are masters of the situation; they lay down certain rules, and from those rules they will not swerve a hair's breadth. They will have Barley of good colour, good shape, fine skin, of one or two fixed varieties that have been proved to be reliable for malting. Failing all this, they take their money and send their buyers far afield, with instructions to bring back at any price a certain article and that alone. As the field is wide they get what they require, and hold themselves under no obligations to trade at home. Hence the disappointed grower has to do what best he can, either sell at low prices to small maltsters who are not so particular, or to dealers who either sell the Barley as meal, or, combining it with other ingredients, form a feeding cake. The farmer has another alternative, and that is, of course, to use the despised grain at home for his stock. But that is not quite what he wants; he would prefer hard cash, but this year in nine cases out of ten he has had to do without.

Of course we all know of what tremendous importance the "season" plays in the comedy, or rather tragedy, of Barley growing, and the "season" we cannot alter. There are many little points, however, that we can adjust, and it is well we should just recall them before sowing the Barley crop of 1900. We have treated of the Barley crop times and times again; it is a subject to which we must ever recur if we do our duty towards the readers of "Home Farm."

We are learners ourselves, and shall be till the Daisy grows above us, and we attentively read all we can find that bears on the agricultural subject. Some time ago we remarked on an excellent article "On the Quality of the Barley Crop," by Professor Wrightson, and as that article covers the whole subject so well, and is so in accord with all our humble efforts and all our observation, we will, with the Professor's leave, recapitulate the main points of his remarks here. We are all agreed upon the first point, that without quality we have nothing; that is, we need expect no great maltster to look at our Barley samples unless those samples are of the best.

The first two requisites are soil and climate. If you possess neither the one nor the other pray turn your attention to some other industry. You can easily prove whether or not the soil is of the right kind. Have you luck with your sheep, that is with reasonable management? Can you grow good Turnips? If you answer those questions in the affirmative, you may sow Barley and hope for a decent sample. As for the climate, well warmth and dryness are the two principal essentials. There are districts in England that have been noted for fine Barleys for generations. There is something in the soil that no cultivation puts there, and which is not supplied by the most cunningly devised of fertilisers.

If there is one crop more than another dependant on the season it is Barley, and this is a factor that upsets our cleverest calculations. One man says, "Sow early. My best crops were from early sown seed." The next man says, "Yes, but what about that Barley on the last sheepfold? Where did you see better?" Both men are right; right for the year and the season of which they are talking. After all, it is a sort of game of "hit or miss," and our best laid schemes disappoint us. We think if we took the opinion of a room full of good farmers, the majority would say, "Sow early;" the plant then has a chance of getting away from frosts and early summer drought. But, again, we have seen such forcing weather end of May, that the later sown Barley has more than overtaken the earlier. Our idea is this—never lose an opportunity if land is fit and weather favourable, get your

Barley in by all means early; it is off your mind, and there is more than enough work for horses and men later in the season.

Then, what is "early?" That opens up another question. Is the Barley to be after Turnips or after Wheat? This leads up to the condition of the land. We have seen, and you have seen, and will again see, crops of what ought to have been good Barley ruined by too much kindness. The land has been too fat, too rich; the crop has been too big by half, and has all gone down to the ruin of quality. Now, if land be in such very good fettle, we shall get a better sample after a crop of Wheat has rather drawn off the extreme richness, and therefore it would be possible in this case, given an open winter, to get in the seed in January. After Turnips you cannot be so "forrard," but don't lose a chance, following, of course, the custom of the district. Is it necessary to speak of a fine well prepared seed bed? This is most essential.

What shall I grow this year? Well, is it to be maltster or miller, quantity or quality? We have seen a good bit of Barley trade this last autumn, and there was only one variety that the maltsters would look at—"Chevalier." None of the others approach it with regard to malting qualities. There is some subtle difference about it we laymen cannot understand; however, it is what they want and what they will have, or no other. Many of the other varieties yield better, and are therefore valuable in that respect. Everyone has his own private idea as to the proper quantity to sow per acre, and the sort of grain. Quantity differs from $2\frac{1}{2}$ to 4 bushels—here again general custom must be the guide. The seed should be good and sound, and of an approved variety. Some, again, are in favour of "hinder ends" or small screenings, others prefer seed from the bulk, which, of course, if not any better, is much more expensive.

If Barley is difficult to grow, it is also difficult to harvest; it is apparently ripe ten days before it is really fit. Farmers are often in too great a hurry to cut, as there is such a danger of ripe Barley "necking" should a high wind get up. It is wonderful, too, how a shower when the corn is in stook will improve the quality. If the season be at all "catchy," care should be taken in the stacking. Hedgerow stooks must not be mixed pell mell with those from the drier and more exposed parts of the field; indeed, during leading the master or an experienced hand should never leave the field. A little care then saves infinite trouble afterwards, for no machine has yet been invented which will remove discoloured grains.

As to the use of artificial manures, there are many fallacies abroad. Sometimes a crop wants a little help, at others the money so spent is worse than wasted. A dressing of superphosphate increases the weight, and 1 cwt. of nitrate of soda or sulphate of ammonia will improve the vigour of the entire plant. Lastly the Professor writes: "It will be found that previous manuring, and general good cultivation carried out during a series of years, will produce a better result than any immediate dressing of fertilising matter."

WORK ON THE HOME FARM.

Farmers are still marking time, for there is little chance of making good headway with farm work. We have had a heavy fall of snow, which has nearly all melted and left the surface very wet, and we are now having severe frosts, which will do good if the weather will only keep fine. To-day the land is too hard for the plough, so muck-leading is the only available occupation. Some of the yards are now too full, and need relief from the great depth of manure, so this is necessary work, otherwise not much is gained by carting the stuff into hill, from which it will again have to be forked into carts when it is time to drill Swedes. Of course, if the field lies a mile or so from the yard, which is often the case in some districts, there is a distinct advantage in getting it out now. The extra labour of carting muck long distances and bringing grain crops in is really an extra rent put on the land. Few men when taking farms take sufficiently into consideration the average distance of the arable fields from the farmstead. The difference in value between extreme cases may be 10s. per acre or more.

Wheat holds its own but does not grow much; it has had quite enough moisture. We saw the corner of one field looking in a very bad state the other day; the hounds had crossed it, and apparently the whole "field" had crossed this particular corner in a body; about half an acre seemed to be quite ruined, and much as if a heavy drag had gone over it. Cases of thoughtlessness such as this make farmers look askance when they see hounds coming. Being in the near neighbour-

hood of a large city, perhaps the field may have been composed largely of persons ignorant of the appearance of a Wheat field.

Mangolds are now fit for use, and are already being drawn upon. They must be well husbanded, for it is a long time to grass yet. We notice that complaints have appeared in the papers of the Government having bought forage (for the war) abroad instead of at home. We fancy all our English hay will be required at home, and certainly so if we are to have any sharp weather. Ewes are healthy and doing well, lambing reports are favourable, but, so far, the fall of lambs is small. Very early twins, however, are not an unmixed blessing, as a very good mother is required to get a pair fit for early killing.

TOBACCO GROWING.—Many years ago Tobacco was pretty extensively cultivated in Ireland, and to this day fields are met with here and there, still known as the Tobacco field. Vexatious restrictions were however, put on the growing of it, and its cultivation ceased altogether, Col. Everard, of co. Meath, who is always to the fore in any useful agricultural experiment, grew some Tobacco last year, and it has been on view at the offices of the Irish Agricultural Organisation Society. The samples shown were very good, and if the cultivation of "the weed" were permissible, it would seem to open up a vast field of enterprise for farmers and others in this country. The climate of Ireland may be a trifle on the damp side some years, but the Tobacco plant seems to thrive luxuriantly. The specimens on view were grown on two experimental plots, measuring each 49 square yards. In one case the plot was manured as an ordinary Turnip field, and in the other heavier manuring and doses of liquid manure were used. The crop was harvested on the 29th of September, and took six weeks to dry thoroughly. When quite dry the crop from the first plot weighed 14 lbs. 12 ozs., and from the other 20 lbs. 15 ozs. The revenue duty amounted to 2s. 8d. per lb. The 35 lbs. of leaf produced 33 lbs. of manufactured Tobacco, and at this rate the average produce per Irish acre (which is much larger than the Statute) would be 2640 lbs. Col. Everard calculates that the gross value per Irish acre, with Tobacco at 4s. per lb., would be £528, from which £352 would have to be deducted for excise duty, and £44 for cost of manufacture, leaving a balance of £132 for rent, labour, and profit.—("Rural World.")

THE R.S.P.C.A. AND WOUNDED HORSES.—The Royal Society for the Prevention of Cruelty to Animals has made itself rather ridiculous, in connection with the war, by advising the Government to send a special corps of horse slaughterers to prevent unnecessary suffering in the field on the part of wounded animals. No one feels more for a wounded horse than does the trooper or driver, as the case may be, and no court martial is on record of a man being charged with destroying a horse he thought too much injured to recover. This is saying a good deal when it is remembered that a properly qualified and military-trained veterinary surgeon is detailed for duty with each cavalry regiment and depot of artillery, among the transport corps, and at the base. Each troop has its farrier sergeant, and each regiment a farrier major, all instructed in veterinary matters and at the disposal of the veterinary officer, who has an orderly told off each day or week for his own service. This man carries in special wallets the means of first aid as well as last aid, and the officer or his orderly settle the hopeless cases with the revolver on the spot. It was, however, decided at the Geneva Convention that veterinary officers should not come under its protection, so, though not being combatant officers, they are, nevertheless, liable to capture, and cannot afford aid to the wounded at the risk of the doctor being himself taken prisoner. This is very prettily pointed out in the courteous reply given to the R.S.C.P.A., which is recommended to get the Convention extended to include vets and their orderlies before asking to add useless non-combatants to an army by introducing knackers.—("Farmer and Stockbreeder.")

THE DISINFECTION OF RAILWAY HORSE-BOXES.—A memorial has been addressed to the Board of Agriculture by masters of hounds, owners, breeders, and trainers, and others who are interested in high-class horses, on the subject of the disinfection of railway horse-boxes. It states that there has been for many years past a serious prevalence of infectious ailments in the various studs and stables of this country, leading to great and increasing loss through the deaths of valuable horses and mares, and that such diseases are in a large measure spread through the neglect of the railway companies to cleanse and disinfect horse-boxes after use. It is pointed out that the existing regulation, requiring the companies to sweep out the horse-boxes and to wash the mangers with water, is wholly insufficient to disinfect such boxes by destroying the germs of disease, but, even so, the regulation is seldom, if ever, given effect to by the companies. Vast numbers of horses from America and elsewhere are, it is said, brought every week to this country without any restriction as to their freedom from disease, and these are conveyed in horse-boxes by the railway companies and distributed throughout the country, such horse-boxes being subsequently used without sanitary precaution for the conveyance of other horses, no matter how valuable. The memorialists ask the Board of Agriculture to take the whole subject into consideration with a view to (a) improving and rendering more effectual the prescribed method of disinfecting horse-boxes, whether by the use of Formalin or otherwise; (b) compelling the railway companies to carry out scrupulously the regulation at present existing, and any new regulation that may be made.

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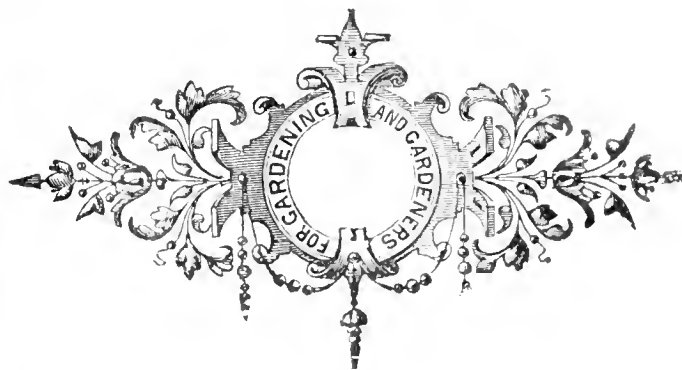
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Journal of Horticulture.

THURSDAY, FEBRUARY 22, 1900.

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CHISWICK GARDENS.

No. 19 OF LONDON GARDENS OVER FIFTY YEARS.

MANY a gardener has passed through Hammer-smith having Chiswick for his destination, and wondered, perhaps, while on the road, how it was the gardens of the Royal Horticultural Society were located in that suburb. It is certain the gardens have a distinct historic connection with the mansion of the Devonshires, for it was mainly owing to the friendship between the possessor of Chiswick House in 1825, grandfather to the present Duke, and Joseph Paxton, that the Society acquired the ground which has been the scene of its practical operations for three-quarters of a century. Though Chiswick had in the past its noble and illustrious residents, it was best known as a fishing village. The special locality where the fishermen quartered mostly rejoiced in the unpleasing name of Slut's Hole. Chiswick itself, by its name, alludes to the sandy subsoil, as sand or gravel underlie a free loam, rendering drainage easy. Hence first farmers, and then market gardeners, were glad to obtain land about the district to grow fruit and vegetables.

Nearly half a century ago, when the enthusiasm of the first great international exhibition brought people to England from every land, thousands went along the beautiful avenue of Limes at Chiswick, intent on viewing the Society's gardens and those of Chiswick House, to which the Duke granted the public occasional access. The enormous increase of houses about Chiswick, many of them of an inferior class, has not rendered the air purer by any means, nor helped floriculture; also the gales and frosts of recent years have killed off some trees once much admired. Hence the visitor now will miss a good deal that delighted people in 1851, but yet he would have to acknowledge that the grounds bear comparison with any about the London suburbs attached to private residences. Before the practice had become common it was usual to line the shrubbery walks with Ivy, St. John's Wort, Stoncrop, and other plants, that gave less trouble than grass edges because they did not require mowing.

In the flower gardens the plan was adopted of

No. 2682.—VOL. CII., OLD SERIES.

elevating some of the larger beds to break the uniformity that arises from an extensive space being covered with flowers. For a long time it was usual to place in each bed flowers of one colour, but the modern method of variety was afterwards adopted; also an improvement was made in departing from the regular or geometrical plan of arranging the beds. Pansies and Liliaceous species were much in evidence, which showed a succession of blooms beside usual herbaceous plants. Visiting the great conservatory, 300 feet long, in 1877, a friend was astonished at the grand display of Camellias during May, while autumn was remarkable for the varieties of climbing Fuchsias, and, at all seasons a selection of fine-foliaged species made a show.

Concerning the trees and shrubs it may be noted that the Lebanon Cedar is very observable. Near Chiswick House are several ancient trees, beyond these an avenue of younger specimens, but the locality is not favourable for Conifers. Portugal Laurels are numerous, some particularly large ones have increased by layering, also a good space is occupied by Rhododendrons, most of them of fine growth. Probably nowhere near London are grown together as many examples of the Evergreen Oak, and the varieties of Holly are numerous, both scattered trees and others edging paths or avenues.

What is called the Napoleon Walk has a Yew hedge that is one of the glories of the place, it must be nearly 20 feet high. At one end of it is a fine Deodar, planted by the Emperor Nicholas in 1844. Another Yew hedge occupies one side of a walk, on the other of which is a ha-ha. This hedge has its sombreness relieved by recesses here and there, these affording space for Golden Yews. The Bay ground, which gives a pleasant view over the water, has been admired on account of its trees, which give the name. Amongst the remarkable single trees we notice an immense Oriental Plane, a large Hornbeam, which is rare, and an old May Duke Cherry.

It is manifestly impracticable to condense here any account of the history or progress of the Society's gardens during the fifty years. As a rule organisations move slowly, and are inclined to Conservatism, so that has made the changes fewer. Generally, we might say, what alterations have been made are improvements. Some things the Society did in the past it cannot repeat now; for instance, adding great accessions to our list of exotics. Previous to 1850 the lamented Douglas had sent to the Society upwards of 200 hardy species, mostly showy, amongst them *Ribes sanguineum* and *Nemophila insignis*. Important acquisitions from America were due to Hartweg, and from China to Fortune. At that date the experimental fruit garden had been for a quarter of a century under the management of Mr. Thompson, a man of keen insight, with great knowledge of the habits of trees, and the qualities of fruit varieties. The experimental departments for flowers and vegetables were always an object of special interest, but in these days many nurserymen have their own experimental gardens.

For a long time it is evident a large proportion both of nurserymen and private gardeners were ignorant of, or indifferent to, the benefits conferred on horticulture by the Royal Horticultural Society. A little before the date of which I have been writing, there was an instance of the Society's activity in behalf of agriculture and horticulture, in securing the aid of Prof. Solly, who undertook a research into the value of the different manures, delivering also a course of lectures upon the subject. The great conservatory was open to a good deal of criticism. Down the centre, where the plants were placed in a bed of soil, they grew so thickly at first that it looked like a bit of jungle, and the entrance was badly contrived, giving one the idea of a greater descent than there actually was. A peculiarity in the construction of this conservatory was the arrangement for ventilation, the air being led at the sides over gutters containing rain water, then across hot-water pipes, so that it might be both moist and warm. In 1850 or 1851 the Society exhibited one of the first houses built by Hartley & Co., showing the application of their patent rough glass. About the same time some new pits were made in the gardens, on a plan enabling the gardener to enter them without exposing the plants to rain or cold.

Some of the gardens and orchards at Chiswick used to be divided from each other by fine Hawthorn hedges, over which the wild

Convolvulus and Nightshade threw their sprays: none of the flimsy affairs called hedges that we see being planted now. The grounds were very neatly kept by Cook, Jessop, Mills, Dancer and others; the orchards of the last often presented a beautiful sight in spring; during a favourable season the Apples and Plums would be so loaded as to need the support of props. It is, however, one of the disadvantages of Chiswick that cold air, at times, descends into it from the uplands, causing mischief during winter or spring. The oldest nursery was that of Gleudinning on Turnham Green. It was probably started early in this century, when Heaths, and allied species now common, were novelties. It ceased to exist some years ago, the last occupier being Mr. Ewen. Twenty years ago a nurseryman in a small way occupied Hogarth House and its gardens. The place is supposed to have been favoured with visits from that illustrious painter, but time has dislodged this tenant too.

Before the vast increase of buildings about West London from the valley at Chiswick we could see clearly the heights of Notting Hill, Bayswater, and other localities towards Hyde Park. Bayswater, though not on the river like Chiswick, yet bears a watery name. It once had several springs and rivulets, and it is under the disadvantage, from the gardener's point of view, of being somewhat exposed to cold winds. The nurserymen formerly here have departed, but horticulture is represented in its squares and parlour conservatories or gardens of the residents in Westburnia, so called. Westbourne Place had, we read, beautiful grounds in the reign of George III., the owner, Jukes Coulson, employing some very skilled gardeners. He had as a neighbour the singular half crazy quack, Sir John Hill, who had a nursery where he cultivated plants for his decoctions and distilled compounds. Some people believed in his essence of Waterdock and balsam of honey. Subsequently his ground was turned into a public tea garden.

On Craven Hill, which had belonged to Lord Craven, was the nursery of Messrs. Hopgood, which flourished some years there. About 1845 the firm removed to Shepherd's Bush; the place was closed a few years ago. The later years of the life of the illustrious J. P. Loudon were passed in a Bayswater mansion called The Hermitage, where, after he was unable to employ himself in landscape gardening, he made experiments in the construction of houses. Not far from him resided Count de Vandt, a great admirer of Roses and a collector of showy exotics. Mr. Burley's nursery of Hereford Road, now vanished, attracted visitors in 1877 to see his specimens of *Aspidistra punctata*, a remarkable plant very little known then. Its flowers, which are purplish in colour, are matured under the soil, seldom coming into the daylight.—J. R. S. C.

SEAKALE FROM SEED.

THAT good roots of Seakale, suitable for forcing, may be had the first year from seed, was fully demonstrated by Mr. Atkins at the last meeting of the Kingston Gardeners' Mutual Improvement Society. The lecturer dealt with the system of growing and forcing in beds, but his principal point was the management of seedlings to produce a crop of Seakale for the kitchen the first year. To do this, choose an open site for the seed bed, and it is very material that the ground be trenched, or bastard trenched, and well manured. Not later than the end of March sow seeds at 6-inch intervals in drills 18 inches apart, keeping the bed clear of weeds and the surface loose with the hoe. A dressing of salt, 4 lbs. to the rod, or sprinklings of nitrate of soda just before rain, will be of great benefit to the seeds and young plants.

In December lift all the crowns, taking extreme care to secure all the roots. In the absence of a Mushroom house put the roots in 12-inch pots in fairly good soil, and cover each pot with another, inverted, and place them in a temperature of 50° to 60°, the former for preference. It is not wise to attempt to force these yearlings too early or too fast, for that would be courting failure, but for producing heads from the end of January onwards such roots are excellent. Mr. Atkins exhibited, as illustrative of the practice, a dozen roots with heads ready for cutting, which were very good indeed, and as Mark Twain pertinently says, "Never agin a success."

The variety recommended for this system was the old Purple, as this seems less liable to disease than the newer Lily White, at least on some soils. No remedy for the disease was given by the essayist, neither could the audience give one. Seakale was recommended as a crop which cottagers would do well to grow. A rod of ground will produce about 160 crowns, which means many dishes of this delicious vegetable. It was stated that several cottagers round Cambridge cultivate Seakale either from seeds or by the ordinary method of cuttings, and often pay the year's rent with the proceeds, besides securing an occasional dish for their selves.

Mr. Atkins, it is interesting to note, practises on Kingston Hill,

which is well known for its shallow gravelly soil, and where it is difficult to grow anything in dry seasons. This, therefore, makes his experiments with Seakale all the more valuable, and, in my opinion, is conclusive evidence of the excellence of the system he so ably advocated.—J. T. BLENCOWE.



ODONTOGLOSSUM CRISPUM MUNDYANUM.

There were very few Orchids at the meeting of the Royal Horticultural Society held in the Drill Hall on Tuesday, February 13th. The weather was against growers bringing out their plants. As a consequence the Orchid Committee gave few honours. One recognition took the form of a first-class certificate to N. C. Cookson, Esq., Wylam-on-Tyne, for *Odontoglossum crispum Mundymanum*, which is portrayed in fig. 38. It is a strikingly beautiful variety, with flowers of good form and size. The ground colour is white with, as may readily be seen, immense markings of reddish chocolate. The margins of the broad sepals and petals are slightly serrated. The splendid lip is white with prominent red markings. It is a variety of the first quality, and was much appreciated by visitors to the Hall, as was *O. c. Cooksonianum* from the same source.

EPIDENDRUM (DIACRIUM) BICORNUTUM.

AMONGST the several Orchids that give the majority of growers a considerable amount of worry and anxiety must be classed *Epidendrum bicornutum*. These troubles result from, in some cases, an inability to flower the plant at all, and in others from the fact that the stock gradually dwindles after perhaps flowering once until it has to be thrown away. This failure I consider to be extremely regrettable, as the flowers, when the plants are well grown and can be kept in good health, are amongst the most attractive in the entire Orchid world. They possess an exquisite beauty that appeals to everyone, and every season one appears better and better able to appreciate its peculiar charms. The flowers of *E. bicornutum* (fig. 39) have not the gorgeous colouring or the size of the *Cattleyas*; but they have a grace that is entirely their own, and which renders the plants worthy of more than extra care on the part of the grower.

It is now many years since the culture of this Orchid was first taken up at Sunningdale, and I need scarcely say I entered on the task in some fear and trepidation, as was natural considering the reputation the plant had made for itself. I was, however, determined to succeed if such a thing were possible, and I may say, without being accused of egotism, that I have done so. On more than one occasion the exhibits that have found their way from Sunningdale Park to the London shows have been eulogised in the pages of the *Journal of Horticulture* and its contemporaries, which will be sufficient warrant for the task I am now undertaking. This is to give briefly the methods that have been adopted with the plant, and which have resulted in regular flowering, and what is perhaps more important, constant improvement in the condition of the stock.

At the outset the difficulty was to find the best place for the plants, and it was only after repeated trials that they eventually reached a hip-roofed Pine stove. They were suspended over the path, and after a time it was plain to see that the position practically met their requirements. However, they were destined to undergo another move, for Pine growing was discontinued, and I cast about for a new and equally good position. This was found in the structure they now occupy, which is a span-roofed Croton house, running east and west, and fitted with lath roller blinds. This place was chosen because previous experience had taught me that the plants must have almost all the light that our climate affords; and as it is only under those conditions that we can insure the highest degree of colouration in the *Crotons* this appeared to be the place. The results have far exceeded my most sanguine expectations, for, as many expect Orchid growers can testify, the plants simply luxuriate.

Thus the vast majority of gardeners can supply the chief requirement without much trouble, as they have only to choose between the Pine stove and the Croton house. The next step must be the basketing of the plants. I prefer for this purpose shallow teakwood receptacles, as it has been proved that the plants like to dry rather quickly after watering, which would not occur if deep baskets holding a considerable quantity of compost were employed. "But," will be asked, "what shall the compost consist of?" and I would reply about 2 inches of the best peat and broken crocks, with live sphagnum moss over the drainage. This does not sound much, but as a matter of fact it will be ample for our purpose. For potting or renewing the

compost we choose the period immediately after the plants have ceased to flower, after which the only attention they receive or require is watering, but this must be done with care and judgment. Thrips should not attack the plants, but if they do the structure must be fumigated.

During the winter months the plants are suspended on the south side of the house, but in the summer they occupy the northern slope. As has been said, they must have ample light, and the lath blinds are only run down in the summer when the sun is shining very fiercely, and they are drawn up again very early in the afternoon. The house is always closed with plenty of moisture, but never to the point of stagnation. As a matter of fact, it is to the atmospheric conditions that I attribute my success with this and other "miffy" Orchids. The atmosphere, I insist, must be kept sweet, no matter how moist and warm it may be. There must be an absence of that stuffiness which is common to some houses, as such a state will inevitably lead to failure. I like the house to feel comfortable to all who may enter, and not to be close and oppressive. I should have said previously that the compost must never become sodden; indeed, the roots are better just on the dry side during the short days of winter.

These directions are very simple, but they are exactly such as I have long adopted, and which I am convinced will lead anyone to success if they are carefully observed. If I have omitted any point

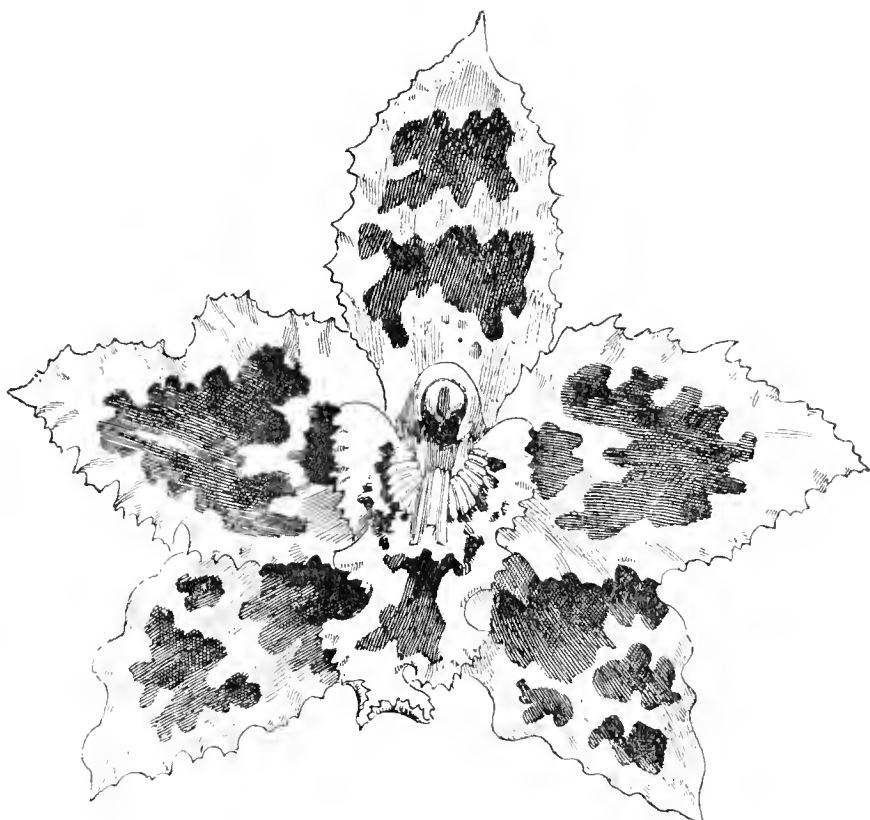


FIG. 38.—ODONTOGLOSSUM CRISPUM MUNDYANUM.

that a reader desires information upon, I shall be glad to give it, as my great desire is to see this Orchid as extensively grown as its merits entitle it to be. I may add that *Broughtonia sanguinea* will flourish under similar conditions, but requires slightly less peat and sphagnum moss.—F. J. THORNE, Sunningdale Park, Berks.

CYCLAMEN CULTURE.

It is difficult to say why, but the fact remains that many excellent growers of plants still consider the growing of a good collection of *Cyclamens* a test of superior ability. That they require care, I admit, but they are certainly as easy to grow as *Pelargoniums*. And to go even further than this, I think I can say that to present *Pelargoniums* of the regal section in the form our best exhibitors do is a much more difficult task than to do the same with *Cyclamens*.

It is a pity that private growers—where possible—do not study more closely the way the market men grow their plants. They would often learn useful lessons that would save them much unpleasantness and disappointment. And one of the things they would learn would be that the majority of the plants they grow are too much coddled and kept too warm summer and winter. The *Cyclamen* is an instance of this. In reality a semi-hardy perennial, it is treated in many instances like a tropical or stove plant, with the result that much of its natural vigour is lost.

First the seeds are sown in a strong bottom heat; when the seedlings appear they are kept from every breath of air, and usually spend the first six months or so of their lives in a Melon house on

the shelves, or in an overheated plant stove with other occupants equally ill-treated and debilitated. I am not saying this is the case in all private gardens, but that it is in many I have had ample evidence for many years.

Again, the practice of keeping the old corms year after year and subjecting them in summer to a kind of roasting and drying system under the impression that some great good is being done, has nothing to recommend it, but it is one of the old customs that die hard. Twelve or thirteen years ago I was growing these plants for market, and staged a dozen at a West of England Show only a little over a year old but crowded with fine foliage and flowers. This system was not then so widely known as now, but even yet it is not practised as much as it ought to be.

Cyclamen seeds should be sown during October and November or in January according as they are wanted in flower early or late, and for a succession seeds may be sown at all three months. I like to dibble the seeds in separately, about half an inch deep and an inch apart. Cover with a little clean moss and stand the pans in a warm moist house. This allows of their remaining without disturbance until the seed leaf is well developed. I used to leave them longer, but I am convinced that it is a mistake to leave them until the next leaves are strong, as the roots become more matted, and it is difficult to remove them without injury.

An ordinary greenhouse temperature now answers well, but the dry parching atmosphere found in some greenhouses suits them very badly, and they would be better in heat than in this. What the plants want is ample light and a genial growing temperature; they may stand pot thick, if necessary, so will not occupy much room until the leaves begin to push up, when each one must stand well clear of its neighbour. But while liking ample light, due protection from the midsummer sun is necessary, and this is best provided by movable blinds of light, thin texture, and which must only be used when necessary.

The plants may go into their flowering pots in September or earlier if they are ready, and must never be shut up in a close, hot, and moist atmosphere. As to the depth to place the corms when potting, let them just peep cut of the compost, and the sinking of the soil and the growth will place them exactly right just out of the soil.—H. RICHARDS.

NOTES FROM IRELAND.

THE WEATHER.

The weather for the past week has certainly tested the resisting qualities of everyone. In many places the intense cold has damaged stove plants, whilst Cinerarias have also suffered. The following particulars have been issued by Mr. F. W. Moore, Curator of the Royal Botanic Gardens, Glasnevin:—"It may interest your readers to know that on Saturday night last the minimum thermometer on the grass (a registered and certified instrument) registered 22° of frost, falling to 10° Fahrenheit. This was the coldest night registered here since 15th of December, 1882, when there were 22·4° of frost. On the 24th December, 1878, there were 27·4° of frost. Fortunately, the snow has given place to a few showers, which have done dual duty by removing the snow, and at the same time removing it with the greatest safety to vegetation. The weather at present is good."

AN ACCIDENT.

A rather sudden fatality occurred recently amongst the rank and file of gardeners in the death of Mr. James English, the trusted gardener-in-chief to the Oblate Fathers at Inchicore, Dublin. It appears Mr. English was engaged in pruning, he having placed a ladder against the tree, and whilst severing some of the branches, lost his balance, and received severe bodily injuries. He was conveyed to the hospital, but the skilled attendance was ineffectual to prolong life. The deceased leaves a wife and family to mourn his loss, and in return for his valued services the Oblate Fathers have made arrangements that his family shall not need the support accorded by the city.

A NEW NARCISSUS.

I have recently visited the well-appointed gardens of Mrs. Black, Blackheath, Clontarf, and the skilled and unassuming gardener, Mr. Hume, escorted me to a row of hybrid Trumpet Narcissus. There was a fair number of flowers in all stages of development, but owing to the frosty weather the perianth segments were partially closed. It is a new seedling that has been in bloom since the first week in January, and has received no protection. The blooms are very fine, and this variety is destined to have a great popularity, owing to its earliness and the size of the bloom. The flowers enclosed in the tin box are those alluded to above. They were barely open, and I trust will be received in good condition.—A. O'NEILL.

[The Narcissus sent are certainly of great promise, but it is hardly fair to judge of the size and colour of the flowers, considering the weather to which they have been subjected. Perhaps Mr. Hume will send us a few more specimens a little later?]

PINCHING FRUIT TREES.

UNDER the head of "Blossom Bud Formation," on page 137, "S. S." desires to know "at what months of the year shoot pinching must be done, and the manner of doing it, to produce similar effects to root pruning?"

In the first place, let me say that if "S. S." means by the term "similar," effects which are "exactly the same," as I know some casual readers do, and as the quotation rather implies, it is necessary to point out that I very clearly stated, on page 87, that while the arrestation of growth by shoot pinching facilitates the formation of fruit buds, I was careful to add, "a more marked, quicker, and greater increase of such buds can be brought about by the still greater growth arrestation effected by checking the extension of the roots." Let there be no misunderstanding on this point, no confusion of terms which may be similar, but far from being precisely the same. It is easy enough to write, but not always easy to make everybody understand exactly what a writer seeks to convey.

I now fear I must disappoint "S. S." No person living can tell him exactly when and how to pinch his own trees to induce them to form blossom buds, at least without seeing the trees, and even then they may be in such a state of weakness on the one hand, or strength on the other, as to be beyond being usefully influenced by the process in question. There are thousands of such trees almost all over the country, but also thousands more that could be made to bristle with blossom buds as the result of pinching the growths in the right manner and at the proper time.

Ancient Pear trees, for instance, against walls, or trees that for a generation have produced weak summer growths from among the worn out and attenuated spurs on the lower parts, and stronger growths on the upper portions, such growths having been allowed to extend through the summer to be cleared off in the autumn or winter; trees of that kind cannot be made satisfactorily fruitful by summer pinching. The time has long gone by for that to be effected.

The same can be said in respect to bush fruit trees of any kind in the open—Apples, Pears, Plums, Cherries, Red or White Currants, and Gooseberries. If any of these have been permitted, as countless numbers are, to produce something like a thicket of long summer shoots to be cleared out in a wholesale way in the winter, and the practice has been resorted to for some years, it would be futile to expect that they would respond by shoals of blossom buds to summer pinching. They will do nothing of the kind. A few might be produced, no doubt, by a scientific gardener such as Mr. Abbey, or an equally competent amateur in fruit culture like Mr. Ellison; but a venture may be made in saying that neither of them would rely on the practice, as they must both know, to use an expressive simile, that the "game would not be worth the candle." No, they would resort to different means; and why? Because it would be too late to render such trees fruitful by pinching alone.

Such cultivators as those named know very well what all who are engaged in fruit culture should clearly and fully comprehend, that all those summer shoots made and cut away annually, and in aggregate length enormous, have each year been engaged in producing in the soil roots of corresponding length and strength; and, as these roots are in their substance perennial, their accumulated force becomes so great that it cannot be subdued by shoot pinching, summer pruning, or any kind of pruning that involves the shortening of branches, to the extent of materially inducing blossom bud formation. It would not be difficult to explain the manner in which such trees should be treated, but that is not the question at present.

The cardinal point to remember is this—when the underground branches of a tree become much more powerful than the leaf branches, as must of necessity be the case when long, strong growths are produced in summer and cut closely out in winter, practically all the buds retained are forced into further growths essentially of a blossomless character. If we go to the other extreme and find the roots proportionately much weaker than the branches, then many or most of the wood buds will change to blossom buds, and the tree make little, perhaps too little, growth. We want the mean between the two extremes—a due balance or equilibrium between the part of the tree within the ground and the part above it. There will then be neither an undue preponderance of growth nor blossom, and the tree will be fruitful yet healthy. Young trees can be moulded into this condition by pinching the summer side growths before they become strong, as by arresting their extension, the extension of the roots is also at the same time checked; and partially, if not mainly, as a consequence of this, and partly as improving the basal leaves as organs of sap elaboration and assimilation, blossom buds certainly form, simply because they cannot help it. The apical extension of the normal buds is arrested, and the embryonic leaves within them are changed into petals and organs of fructification.

When shall we pinch? Not, in my opinion, as Mr. Mitchell said last week (page 137), until we form the trees—i.e., obtain sufficient main branches by shortening the few first produced. Some persons shorten the growths more or less severely because there are too many of them, as if there would be fewer another year! There will be more. Shortening the growths increases the number. We must winter shorten till we secure the requisite number, then stop the process, for an excess of main branches is injurious, as being antagonistic to fruitfulness. Most trees and bushes have far too many main branches. Those of the larger-leaved kinds are better, on the average, 18 inches than a foot apart, this latter distance serving for bush fruits.

From the main branches thus formed and disposed side growths issue. These are frequently too numerous, and in such case the removal of some when an inch long, or before, is excellent practice—disbudding. Now assuming all that form are allowed to grow till the autumn, and the main branches are at the same time much too close together. What is the result? It can only be a bundle of crowded shoots and leaves—a thicket. In this case, which is much too common, what is the condition of the basal leaves of these shoots? Sap is drawn from them by the stronger parts above, while the vitalising influence of the sun is denied them. These lower leaves are then of necessity structurally and chemically weak. They cannot, or only in the slightest degree, discharge their respiratory functions, which is the first necessity for the manufacture of starch from carbon obtained from the air and materials supplied by the roots. In other words, they cannot provide and store organised matter in the stems adjacent to where the blossom buds should be. The resources of the soil and air are secured and used by the better leaves above them, and these very parts are cut away in pruning and burned. What short-sighted practice it is?

Let us look at the more rational way. This is easy, economical, and effectual. Prevent the elongation and crowding by pinching the shoots. As to the "time" this should be done, it may be said that it cannot all be properly done at any one time; nor at the same time everywhere. It depends on the growth of the trees. The shoots first elongate from the upper parts of the branches of bush trees, and also along the parts of those near the tops of walls. These strong shoots are usually ready for pinching by the middle of June. Nip or snap off the tips above the third or fourth full sized leaves, not counting the small basal leaves. The knife ought not to be required. The sap is then diverted into the lower and weaker shoots, and strengthens them for pinching a week or so later, and soon afterwards the process should follow with the weakest series at the base. By this simple and rational division the strength of the majority becomes equalised.

By this early pinching it may be feared by some persons that the back buds will start into growth. Only the two top ones will do so, rarely three, while the buds in the axils of the small basal leaves will be strengthened. When the two secondary growths unfold two or three leaves pinch them to one, and if tertiary shoots or sub-laterals follow treat them in the same way, allowing one leaf to remain in each instance. The effects of this discriminate pinching are manifold. 1, By topping the longer first, and the weaker shoots later, these are strengthened. 2, By preventing the elongation of hundreds of growths and the development of thousands of leaves, the elongation of what would be correspondingly long and strong roots is to a material degree checked. 3, The mineral constituents of the soil are economised instead of being spent on shoots to be burnt. 4, If the soil be firm, yet porous, as it ought to be, not very rich and not thoughtlessly dug, fibrous roots will be incited. 5, The basal leaves on which the sap is concentrated, and the sun can shine on them, become ten times better than under the smothering system, and ten times more nutrient matter is stored in the portions of wood that are not cut off; and, 6, the general arrestation of roots so modifies the sap pressure that all the basal buds are not forced into leaf and wood growth, but a sufficient number are changed into floral organs, fruit following it if weather permit. It is easy to assist Nature to change wood buds into blossom buds, but difficult to thwart her laws by changing fully developed blossom buds into wood buds—at least I have not been able to accomplish the feat.

Some readers may not unnaturally think that all the pinching described involves a good deal of trouble, and they may ask if I would do it myself? As to the trouble it is not so great as it seems, and I have applied the process to garden trees that had to be kept within narrow limits, and yet to be laden with blossom in their season. With unlimited space, and for utilitarian purposes I should adopt a different method. If the branches of fruit trees are 2 feet asunder, and the side growths only of moderate strength, the sun can reach the basal leaves which become stout and strong, quite sufficient blossom buds forming for a crop of fruit as heavy as the trees can profitably bear. This, as in the case of the pinching, is the teaching of experience.—A LINCOLNSHIRE GARDENER.

SWEET PEAS.

THE BEST WHITE.

I AM often asked which is the best white Sweet Pea in cultivation. For years I invariably replied Emily Henderson, but at last I must change my opinion. Not that this variety has deteriorated in any way, but simply because a better has found its way into commerce. Mrs. Sankey was thought by some persons to be the best white, but any variety that is distinctly tinted with pink cannot well lay claim to the title. Eckford's Sadie Burpee is now my favourite. The blossoms are of such splendid substance, while their purity is undisputed. This is what is known as a hooded variety, which means that both standard and wings incline inward at the edge.

CREAM OF BROCKHAMPTON.

Anything new in what are termed yellow Sweet Peas is sure to be welcomed. Not that I think any variety has a right to the name of

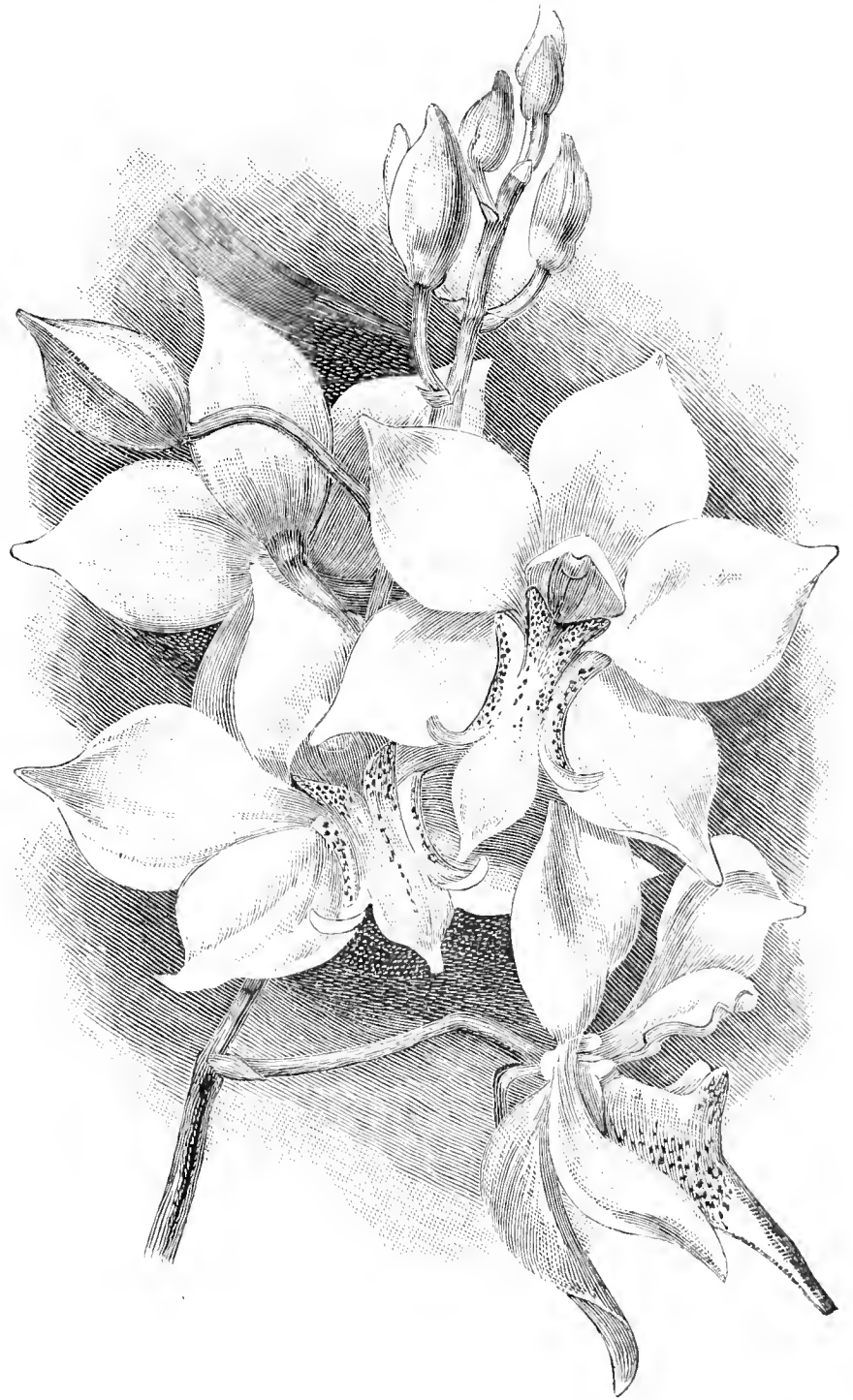


FIG. 39.—EPIDENDRUM BICORNUTUM.

yellow as yet, for no one can say that we have a true yellow-flowered variety. In Cream of Brockhampton we have the nearest approach to that colour. The standards contain more cream colour than do those of Mrs. Eckford, which hitherto has been regarded as the best variety of that tint. The new comer is one of Mr. Foster's seedlings.

GORGEOUS.

I should like to supplement what "Practice" says on page 99, about this Pea. The colour is quite unique, and thoroughly deserves its name. On reference to my notes of new varieties last year, my colour description is much more elaborate than that given by "Practice;" it contained so much variety of colour that I noted it carefully. This may not, however, be correct for all that, as the descriptive tints of colour are very much a matter of taste. Here it is a standard orange red suffused with apricot, wings pale rose with a purple suffusion, keel pale lilac. A grand flower in every way, and quite one of the best of Burpee's introductions.—E. MOLYNEUX.

A NATIONAL FRUIT SCHOOL.

"A NOTTS GROWER" should not too hastily assume that the establishment of a national school of horticultural practice, such as I referred to recently, is so much of a chimera. It is evident that Sir Trevor Lawrence, the President of the R.H.S., does not think so either, for in the brief reference he made to the hoped for new Chiswick, though his mouth being yet closed as to details because of negotiations in progress, he seemed to think that the Society, with the aid of a combination of numerous County Councils, would in time create this desired school.

It is unfortunate that a proposal so fraught with interest to horticulture should be put forward at a time when the nation at large seems to be most concerned with watering South Africa with human blood: but there are some persons at least who can look forward with hopefulness to what must be regarded as a desirable consummation.

When I referred to the need of a school for practice in fruit culture, of some 200 acres in extent, I wished it to be understood that it was desirable to train students practically, under such conditions as they would later find in any considerable fruit farm, such as they might be called upon to manage. No school of limited area could furnish the experience that a large area could provide, because in the latter case there would be ample scope for general culture of all descriptions of marketable fruits, as also for such experimental work as it may be desirable to conduct. A national school of horticulture, to have any prominent status, should have 100 pupils at least, and if with the aid of County Councils the R.H.S. can eventually supply such a school, then will its inauguration be a red letter day for British horticulture.—A. D.

CRYPTOMERIA JAPONICA.

REFERRING to the note by "C." (page 88) on this Conifer, I must say that I have been much disappointed with it after it attains a height of 12 feet. From that time it becomes unsightly, losing its feather, as it were, on the inner growths to such an extent that it presents a mass of dead branches. So ragged and unsightly have scores of plants of it become, that they have all to be cut down and burnt as they approach that height. Up to 6 feet high it is excellent for the garden in winter, when its bronzy red hue is so pleasing.

Plants from 6 inches to 4 feet high are largely employed for filling the flower beds during the winter months. No Conifer that I know stands the twice planting that stock for this purpose have to undergo during the months of May and October so well. This is mainly owing to the mass of fibrous roots annually produced. *C. japonica* is easily propagated by half-ripened shoots of the current season's growth taken off about 6 inches long early in September and dibbled firmly in a sandy soil in a cold frame. These make capital plants in two years' time, and are well suited for edgings to beds of other shrubs for a season or two. They can afterwards be employed in other parts of the beds with advantage. The soil here varies considerably. Naturally it is heavy and retentive of moisture, in many places it is lighter, so much of an artificial character has been added of late years; still the results are the same.—E. MOLYNEUX.

THE ROYAL HORTICULTURAL SOCIETY'S ANNUAL REPORT.

If the issue of the report to the Fellows a fortnight before the date of the annual meeting necessarily detracted from the freshness of the document when the meeting took place, at least it furnished ample opportunity for perusal and comment, matters of undoubted advantage. In making a few comments on the report I would first correct what seems, as I have been informed, a printer's error in connection with the name of that esteemed young gardener, Mr. W. H. Lees, which has been inserted in the Fruit Committee list, but should be in the Floral Committee list.

Then I observe that the report in a very unobtrusive way makes public a fact of some interest that was not referred to when the list of the Council was published in the ensuing year's "Arrangements," issued just previously. It is that the President, Sir Trevor Lawrence, having overcome the modesty which characterised the whole of the Council in 1897, has accepted the V.M.H. which fell in as vacant by the death of the late Mr. T. F. Rivers. This matter is not mentioned in the report, but is found only in the blue fly leaf issued with it that refers to the election of officers. Naturally the original objection on the part of members of the Council to accepting their own honour could not continue to exist when already two of the original holders of that initial affix are practically members of the Council.

This very blue fly leaf referred to made the welcome announcement that the farce of issuing balloting papers at the general meeting, collecting them, and appointing scrutineers to count and report on what was a foregone conclusion, is now abolished. Under the provision of the new Charter which has been granted there are common sense rules, and where there is no contest there is no ballot. We see also another excellent feature in the new Charter is that members retiring may be again and at once re-elected. As a result we see that that most estimable and kindly amateur gardener, Sir J. T. D.

Llewelyn, M.P., again rejoins the Council, and he will be supported by Mr. F. Du Cane Godman, whom I do not know, and by Mr. Arthur Sutton, whom everybody knows, and who should be able to bring to the Council some very valuable business knowledge.

I looked with special interest for that paragraph in several previous reports, in relation to the Committee awards at the meetings and shows, that had become apparently stereotyped, but was glad to find that it had been withdrawn. Seeing that the Council had so materially increased last year the number of the meetings, a certain increase in the number of the awards during the year became inevitable. The total number of awards for 1898 was 906, and for 1899 931. In the present list we find the Temple and Crystal Palace Show awards set out in separate columns, as are the awards at the Hybrid Conference, and probably this arrangement accounts to some extent for the apparent reduction of the Floral Committee awards from 432 in 1898 to 317 last year. The Orchid Committee, however, have been rather free with awards, having bestowed no less than 216 last year, as against 193 the preceding year, and of this 216 no less than 84 are awards of merit, as against 124 from the Floral Committee for all other flowers, and only 47 from the Fruit Committee for fruits and vegetables. Evidently the Orchid gentlemen are very free-handed, if not too discriminating.

The Council made a very urgent appeal for assistance to enable them to continue the great Fruit Show at the Crystal Palace. Why the Palace directors should reduce their usual contribution to the Show fund by £50 is difficult to understand. It may be due to meanness, or it may be to the fact that the Fruit Show does not pay them. If the latter be so, doubtless the small attendance on the part of the public is due either to the distance the Palace is from London, or to indifference to the fruit as exhibited on the part of the public, or because the Show falls at a comparatively dull time of the year when public interest in such events is somewhat exhausted. Still all those who remember the marvellous interest shown in the great Guildhall exhibition, which, however, was free, must admit that the people of London did evince some interest in fruit then.

Turning to the Council's balance-sheet for the past year, I found the Crystal Palace Fruit Show credited with a cost of £302 1s. 5d.—the pence show the Council's exactness—and with an income of £325 18s. That was very satisfactory, but of course includes the £100 raised by subscription to the Show fund and the £50 proposed to be withdrawn from the Palace contribution; but when I turn to the Temple Show account I find that whilst the cost of that great function was £686 14s. 10d., the income reached £1421 6s. 6d., showing a profit of considerably over £700. No doubt the Council like to make each show pay for itself; but this does seem to be a case in which what is, after all, a great society function may be expected to help pay a little towards the cost of such an eminently practical and valuable exhibition as the great Crystal Palace Fruit Show.

This fact is all the more emphasised when we found that the Hybrid Conference at Chiswick cost £211 13s. 11d., although that sum probably included the luncheon to the members of the Committees and visitors to the Conference; whilst the credit side showed only £56 14s. However, so far as the general financial position of the Society is concerned; and apart from the great increase in the number of Fellows, the Council have been able to carry over the huge sum of £1751 8s. 9d. as a balance to the general revenue account.—OBSERVER.

THE SEASON'S BLOOM.

I AM afraid if "A. D." had looked round our place with me about the time he was penning the notes on page 135, he would have written them rather sadly, provided he could sympathise with those who, like myself, will be called upon to supply a large establishment with fruit in a few months' time. I have never seen the buds so destroyed by birds as during the past two or three weeks. On all stone and also small fruits there is scarcely a bud left, and the snow was quite covered with the husk or shell of the buds cast by the depredators—sparrows and bullfinches. Last season, owing to the dry weather, the birds quickly ate or spoiled all fruits that were not netted. Sacks of good Apples were spoiled on large trees, but I think it worse to destroy the buds now and almost kill the trees.—N. KNELLER, *Malshanger*.

EPPING FOREST.—The Epping Forest Committee of the Corporation, in recommending that £4000 should be placed to the credit of the fund for the year ensuing, report that the thinning operations, which have been continued for nearly twenty years, have resulted in a marked improvement to the timber and undergrowth, while the natural growth of young trees, the timber of the future, has been promoted. The most urgent arrears have now been overtaken, and a much smaller annual felling has been necessary during the last and present seasons. Very little planting has been needed except for the purpose of hiding fences or other unsightly enclosures abutting on the forest and replacing trees destroyed by the drought. In this connection the Committee report that a very large number of fires occurred last summer in various parts of the forest owing to the extraordinary heat and drought, but in most cases the outbreaks were speedily extinguished, and, with one exception, no serious damage was done.



Recent Weather in London.—A considerable amount of rain has fallen in London during the past few days, as heavy showers have been of frequent occurrence. On Sunday afternoon it was dry and pleasant, but after that there was no permanent clearance until Tuesday night. It then turned colder, and on Wednesday morning at the time of going to press it was bright and frosty.

Weather in the North.—The frost became gradually less severe from the 11th to the 14th, when 12° were registered. A partial thaw set in on the 15th, followed in the afternoon and evening by a violent gale and snowstorm from the S.E. Roads and railways were that night blocked in various parts of the country. Much damage has been done to trees by the weight of the damp snow. Since Friday to Monday an imperfect thaw has been going on, but much snow still lies, even on the low grounds.—B. D., *S. Perthshire*.

Kidderminster and District Horticultural Society.—This Society held its monthly meeting on February 14th last. Mr. A. B. Whitehouse gave a lecture, illustrated with limelight views, upon the "Fertilisation and Hybridisation of Flowers." The lecturer explained some of the wonderful methods of Nature for the reproduction of species, and the methods employed for raising new varieties also examples of wind and insect fertilisation. Mr. Whitehouse was accorded a hearty vote of thanks, one member especially remarking that the fertilisation of the Fig had always been a mystery to him. Mr. Whitehouse kindly offered his assistance at any time, either by letter or appointment, to any member requiring information upon the subject of his lecture, an offer which was keenly appreciated by the members. This Society is now issuing its schedule of prizes for the flower show to be held on August 7th next, copies of which may be obtained from the Hon. Secs., Messrs. Rogers and Whacker, Brookfield, Blakebrook, Kidderminster.—F. W.

Salvia splendens grandiflora.—At one time the well-known *Salvia splendens* was in demand as a winter-flowering plant, and few good gardeners were without a supply of it, its bright scarlet flowers showing out prominently in the dull months of the year. Other varieties came, but the general public has not taken too kindly to them. But the advent of *Salvia splendens grandiflora* has altered opinions, and the old type will soon be looked upon as a thing of the past, as neither for profusion of flower nor habit will it for a moment stand against *grandiflora*, with its brilliant scarlet flowers. The habit is dwarfer and more compact. Cuttings taken now can be grown in sandy soil in a steady temperature, potted singly when rooted. When danger of frost is over the plants may be stood outdoors, and treated exactly as a *Chrysanthemum*. It is not wise to leave the plants too long outdoors in the autumn, the second week in September being quite late enough. If given a little warmth the plants readily respond, and furnish scarlet flowers in abundance for all kinds of decoration.—R. P. R.

Hessle Gardeners' Society.—This Society held its fortnightly meeting in the parish schoolroom. Mr. J. Stow delivered a lecture on "Coal and Its Relation to the Vegetable World." There was a good attendance, over which Mr. Mason presided. The lecturer, who was heartily welcomed by the members, asked them to carry their minds back to an age when the world was not inhabited, to a time when one lot of vegetation grew upon the graves of its predecessors. That vegetation was covered by water and other deposits, and pressed until at the present time they have that great steam producer coal. As an instance of how much pressure the vegetable matters must have been subjected to, the lecturer pointed out that the peat bed now at Thorne, which was 9 feet thick, if converted into coal would only produce a seam of a few inches. He also dwelt on the bye products of coal, such as tar, aniline, carbolic acid, and saccharine, specimens of which he produced. Mr. Stow also showed samples of various coal from different mining districts, in some of which impressions of Ferns were to be seen. Votes of thanks to the essayist and Chairman terminated a thoroughly interesting evening.—J. F. D., *Yorks*.

Floods in the Thames Valley.—We learn from a Maidenhead correspondent that during Saturday night there was a rise in the Thames in that district of over a foot, and on Sunday morning hundreds of acres of land in the neighbourhood of the river were submerged, and several riverside residences and hotels were flooded.

Royal Horticultural Society.—The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, February 27th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on "Some of the Plants Exhibited" will be given at three o'clock, by Rev. Prof. G. Henslow, M.A., V.M.H.

Birmingham Gardeners' Association.—The annual tea and social entertainment took place on the 14th inst. at the Colonnade Hotel, presided over as usual by Mr. W. B. Latham. There was an average attendance of members and lady friends, notwithstanding the unpropitious weather, and an excellent programme of music and song rendered the evening thoroughly enjoyable. The toast of "The Association" was appropriately rendered by Mr. Robert Sydenham.

Todeas.—Though Todeas are not numerous, there are a few whose characteristics stand out conspicuously, notably *superba*, whose graceful fronds are always admired. To produce the best results one only requires to follow a similar line of treatment as for *Trichomanes radicans*, popularly known as the Killarney Fern—namely, a dark place with plenty of moisture. In the gardens of George Rinahan, Esq., Roebuck Park, Dundrum, Dublin, are some exceptionally fine plants; the fernery is not very dark, but the light is much subdued. Unlike the Killarney Fern Todeas can be cultivated where light has an ingress, but instead of the delicate softness of frond, one gets a much hardier and less attractive plant.—A. O'N.

National Amateur Gardeners' Association.—The annual meeting of the Liverpool branch was held on February 14th, in the Common Hall, Hackins Hey, Mr. W. Histed presiding over a capital attendance of members. A long discussion ensued as to the best means of increasing the membership, and other ways likely to be of benefit to members generally, the unanimous opinion being that the branch was doing an excellent work, and that there must be no looking backward. Much regret was expressed when Mr. J. M. Smyth, who had been Secretary for the past eight years, announced his intention of resigning, owing to pressure of business. A feeling of satisfaction was experienced when Mr. Smyth gave his promise to attend and help forward the work of the Society in the capacity of Vice-President. Mr. A. W. Ardran was elected President, and Mr. McGregor, Secretary. The usual votes closed the meeting.—R. P. R.

Erica mediterranea hybrida.—This is one of the best of the winter-flowering Heaths, being bright in colour, and lasting a considerable time in flower. It commences to bloom in December, and continues till the end of April, and is bright and charming at any time during that period. The flowers are of a pale mauve when first expanded, but deepen in colour with age, and are produced in great abundance along the whole length of the previous season's growth. It grows freely in almost any soil, provided it does not contain lime, and soon makes a strong, robust plant, which shows to advantage in any situation. For preference it should have a warm, sheltered position, and be so placed that it may receive the full benefit of all the sunshine obtainable during the winter months, which will make a great difference to the size and colour of the flowers. It is easily propagated by cuttings, which root readily and soon form good plants.—C.

Nuts as a Food Staple.—The United States Department of Agriculture has of late been giving especial attention to the cultivation of Nuts, and it has come to the conclusion that the Nut trees of the world would feed from two to three times the present number of inhabitants. Especially interesting are the facts furnished by the Nut specialists. There is no product that requires so little cultivation as the Nut, and none is more wholesome as a food staple. An orchard of 2000 trees in California yields every year over 24,000 lbs. of shelled Nuts. The American Government is making a special point of recommending Nut culture. In New England the abandoned farms are being planted with Nut trees, and the worked-out ground is found to furnish nourishment enough to cause the Walnut, Butternut, and Chestnut to flourish abundantly. Farmers in nearly every north-eastern State are, says a contemporary, planting Nut trees with their Peaches and Pears, and are utilising the hillsides, where nothing else will grow for Nut orchards.

Examination in Horticulture.—Intending candidates for the Royal Horticultural Society's examination, to be held on April 25th, may obtain all particulars from the Secretary, R.H.S., 117, Victoria Street, Westminster.

Rosherville Gardens.—The sale, by auction, of Rosherville Gardens, long advertised as "the place to spend a happy day," is announced to be made next month, and unless some at present unexpected development occur the estate may fall into the hands of the builders.

Canadian Apples.—These are in competition with American fruit in the London market. Shipments during the month of January were particularly heavy, in one day 7524 barrels, containing 22,572 bushels, having been unloaded. A fine sample of Newtown Pippins was among the importation. The culture of this variety in Canada promises more extensive shipments in the near future.

Tasmanian Apples.—Tasmanian Apples at their best are excellent, and arrive at a time when other supplies are either scarce or comparatively inferior. During the coming season, which is at its best in May, we are to have 150,000 cases. The success of the Apple trade of the Colony is largely due to Dr. Benjafield, who went thither about nine years ago, and is now a large grower and exporter. Some of the Tasmanian Apples realise from 15s. to 20s. per bushel box on the London market. These prices do not, however, exceed the highest obtained for the best New York Pippins, and the Blenheim Oranges.

Californian Fruit Growers.—Fruit growers in California furnish an object lesson of what can be done through true co-operation. At the recent meeting of the Californian Fruit Growers' Association the fact was developed that prospects are favourable for bringing into the Association 75 per cent. of all interested in the production of dried fruits. After the 1st of April the work will be under full swing, and plans perfected for handling the coming crop. It is worthy of note that a resolution was adopted against the pending reciprocity treaties now before Congress as "inimical to the best interests of California's great horticultural industry."

An Orchid Home.—Mr. Wells, author of "Three Thousand Miles Through Brazil," says:—"There is no question whatever that the majority of the Orchid family do prefer hot and humid regions; yet, nevertheless, I have myself seen wild Orchids growing amid a rachitic vegetation upon the lofty summits of sierras, and also amidst the drought-resisting vegetation on the summits of the arid table lands of Brazil—regions which are especially notable for their generally very dry climate. There, I confess, to my own astonishment, I have, at times, found Orchids in abundance—not parasites, but really Orchids. As to the second observation, I would point out that, despite the now huge population of Rio de Janeiro, and the eternal hunting for Orchids the woods around that city still abound with Orchids. Moreover, the lovely gardens of Rio will show how happy and healthy an Orchid can be, even when transplanted from the wilds of the forest, and tied by a string to a tree in a suburban garden, living and blooming for years in the company of human beings."

A West End Fruiterer on Cape Plums.—Rich, red, ripe Plums, even in the summer and early autumn, have an alluring charm all their own, and distract the eye from humbler Cherries and comparatively common Strawberries; but what is to be said for the punnets of beautiful Cape fruit now displayed amid wintry surroundings in the West End shops? Brilliantly coloured and purple-bloomed, in appearance as well as flavour, they challenge the home-grown article, and who, wanting Plums out of season, grudges 2s. a basket of six? A mere bagatelle compared with the prices of English Pines, or the neighbouring Asparagus at 27s. the bundle of a dozen or so spears. "And they sell rapidly," quoth a West End fruiterer to a "Leader" representative, "because you see, really, they're not expensive, and are delightful to eat. How long does the season last? Well, I expect we shall be able to get Cape Plums until the English ones are on the market. And after the war—ah, the war plays havoc with us!—they will possibly be cheaper than they are at present. Cape Peaches and Apricots are cheaper, but the flavour is not quite so good; but they grow almost wild out there. A little training and grafting, you know, and the Cape fruit would be as good as the English at a fourth of the price. Ay, it is a pity our young men don't start fruit farming out there—but, well, it's an ill wind that blows nobody good, and the war may at least open their eyes to the possibilities of trade."

Florida Oranges.—The Orange groves in Florida have been visited by a severe frost that has considerably damaged this year's first crop. Bonfires have been started amongst the trees, and it is thought that by this means a second visit can be warded off, and much of the fruit saved.

Tobacco in the Strand.—The attempted introduction of Irish grown Tobacco recalls the fact that the fragrant weed once flourished in Lord Burghley's garden in the Strand. This was in the distant days of Gerard, the famous old botanist, who lived about the time Sir Walter Raleigh introduced the Tobacco plant.

Reading Gardeners' Mutual Improvement Association.—Notwithstanding the very severe weather, a large attendance of members was present on Monday evening last to hear Mr. T. Neve of Sendlesham House Gardens give a paper on the renovation of fruit trees, especially Apples. The lecturer dealt with his subject in an exhaustive manner, his remarks on branch and root pruning, manuring, and watering, being of a very practical character. These were made more interesting by a series of photographs of old trees, which had been renovated, in full bearing. An interesting, and at times animated, discussion followed, in which Messrs. Chamberlain, Powell, Fry, Purkis, Parsons, Blake, Cretchley, Bryant, and Turner took part. A splendid collection of Apples was staged by Mr. R. Chamberlain, the well-known fruit exhibitor, of The Gardens, Cressingham. Although late in the season the fruit was in splendid condition, the exhibit including Golden Noble, Lane's Prince Albert, Wellington, Rosemary Russet, Royal Russet, Cox's Orange, Rymer, Gascoyne's Scarlet, and the Melon Apple. On the proposition of the Chairman (Mr. Fry) a hearty vote of thanks was tendered to Mr. Neve for his excellent paper, and to Mr. Chamberlain for his exhibit. Four new members were elected.

Shropshire Horticultural Society.—The annual meeting of the members of the Shropshire Horticultural Society was held on Monday afternoon, the Mayor (Mr. R. S. Hughes) presiding over a large attendance. The Mayor congratulated the members on the extraordinary success which attended the Society's last show, and on the fact that the receipts for the past year exceeded any previous record by considerably over £200. Mr. W. W. Naunton (one of the Hon. Secs.) presented a most satisfactory annual report from the Committee. The Assistant Treasurer presented the statement of accounts, and pointed out that the total receipts for 1899 amounted to £4739 10s. 11d. The profit on the summer Show amounted to £1050 13s. 5d. The balance in the bankers' hands on December 31st, 1898, amounted to £1898 15s. 3d., and on December 31st, 1899, to £2149 9s. 10d. The actual receipts on two days of the summer Show (excluding subscriptions)—taken at gates, first day £879 14s. 9d., second day £1852 19s. 6d.—amounted to £4154 3s. 2d., and the actual payments to, on account of summer Show alone, £3648 13s. 7d. The Society's total receipts for twenty-five years amount to £65,197 10s. 3d. The first year's receipts were £791 12s., as compared with £4739 10s. 11d. last year, which was about six times as much. The donations and gifts made by the Society amounted to £5840 10s. 6d., and in addition to the balance of £2149 9s. 10d. in the bank, the Society own land situated between the Quarry and the Friar's Bridge.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.	
1900.		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.		
February.		Dry Bulb.	Wet Bulb.	Highest	Lowest.						
		deg.	deg.	deg.	deg.		ins.	deg.	deg.		deg.
Sunday .. 11	N.N.W.	33.1	31.9	36.1	27.6	—	34.5	33.4	42.7	deg.	26.8
Monday .. 12	E.S.E.	23.8	23.6	33.8	15.5	—	34.1	38.1	42.5		5.9
Tuesday 13	E.S.E.	23.7	28.4	37.1	21.9	0.55	34.2	38.1	42.3		11.2
Wed'sday 14	N.N.W.	34.9	33.3	38.5	28.9	0.07	34.2	37.9	42.1		28.1
Thursday 15	S. E.	35.9	35.0	46.9	24.9	0.40	33.9	37.5	41.9		17.6
Friday .. 16	S.W.	39.8	37.5	47.8	34.4	0.08	33.5	35.1	40.3		30.5
Saturday 17	S.S. W.	46.6	43.5	47.8	39.5	0.17	34.1	36.1	40.9		33.1
MEANS ..		34.7	33.3	41.9	27.5	Total 1.27	34.1	37.3	41.8		21.9

The weather during the first part of the week was remarkable for snowstorms, strong winds, and frosts; the latter part being milder with bright sunshine and frequent showers.

FRUIT GROWING IN SOUTH WESTMORELAND.

ANY stranger visiting Kendal Market on a Plum Saturday morning would be astonished to see the long string of carts full of Damsons, and would naturally ask where and under what conditions they are produced. The answer would no doubt be, "You seem surprised at the quantity of fruit here displayed, but this does not represent a tithe of what is grown in the neighbourhood, the majority being sold growing—to the dealers who come from the thickly populated districts of Yorkshire and Lancashire." Visitors to the Lake district will no doubt be acquainted with the route (by road) between Grange and Bowness; probably a more picturesque bit of country can scarcely be found.

Taking either side of the great limestone cliff of Whitbarrow you find most of the hedgerows planted with Damsons, which in spring are beautiful in their purity of white blossom, and in autumn generally laden with handsome black fruit. The mode of propagating the trees and the subsequent culture are of the simplest; any elaborate preparation is looked upon as money ill invested. We must, however, bear in mind that the natural conditions seem in every way exactly suited to the requirements of the trees, with one notable exception—spring frosts. Generally the hill sides are planted, or properly speaking the hedgerows along the hill sides, and it is with these trees we will deal first.

The young trees are all grown from suckers, worked plants being regarded with great disfavour. Suckers are produced promiscuously all round the older trees, and are generally taken up, placed in a small nursery, kept to one stem until of suitable height, and then allowed to branch. When a good head is formed they are placed in their permanent quarters. When finally planted (generally close to a hedge) a pick is taken and the surface of the ground lightly loosened, the young tree has its roots spread evenly over the surface, and a cart of soil follows from which just sufficient is taken to cover the roots. The tree is then staked securely, and usually receives no more attention until the fruit is gathered, although in some cases the newly planted trees are headed back; but opinions vary as to whether cutting back is advantageous or the contrary.

Simple as are the methods of cultivation, what are the results? First, good trees on their own roots, which fruit more freely than worked ones; second, owing to the roots of the trees being kept near the surface, sturdy growth perfectly matured ensues; and third, a fair profit, which enables the farmer to meet the contingencies of the times.

Many persons will no doubt propose more elaborate preparations for the young trees, while others will say, Why not have worked trees? In answer to the first, we are told that lavish preparation of the soil results in strong immature growth, which does not blossom, and worked trees often end in failure because they fruit more sparsely than those on their own roots, and would be ruinous owing to the much larger stones that the fruits contain.

Now a word or two as to spring frosts which destroy so much blossom. I am quite sure the majority of growers prefer a moderate crop on their trees, and look upon a bit of frost as a blessing in disguise. A few years ago the crop was so plentiful that it could not be sold at 6d. per score pounds, while when a moderate crop is produced prices range from 3s. per score, and are then remunerative; one season as high as 7s. 6d. was asked, and buyers were pleased to give it.

Many trees are planted in the hedgerows on the moor. They are growing amongst peat, but the roots soon come into contact with clay, which no doubt enables them to obtain what is wanted during the various stages of growth. Sandy warp also produces good fruit, but undoubtedly the best results are obtained from trees planted at higher altitudes.

Apples are also grown in considerable quantities. Many of the varieties are of local origin and moderate quality. Some growers have come to the conclusion that the newer Apples are superior to their own, and are accordingly planting varieties of good merit, but the majority are content with worthless seedlings, the fruit of which is hard to sell (retail) at ½d. per lb. Many of the Apple orchards are in a deplorable condition; old worn-out stumps of trees infested with moss and lichen, and while adding in part to the picturesque scenery, have nothing to recommend them from a monetary point of view. The Westmoreland County Council has so far provided no instruction in a horticultural sense, but some of the landowners have recently planted orchards with up-to-date varieties, which in a short time must prove valuable object-lessons. The earlier varieties of Pears are also grown in fair quantities, but do not come to the same perfection as on deeper soils; probably the natural soil is too hot and dry for their well-doing.

Plums are grown in considerable quantities, Victoria being the

chief variety. Pond's Seedling also does well. Green Gage crops freely, and the growth of the young trees is generally sturdy, well matured, and of just the right strength for producing buds plentifully.—W. J. I.

P.S.—To show how trees on own roots are appreciated a grower proudly showed me a rooted layer of Victoria Plum, in the hopes it would throw suckers similar to his Damsons.—W. J. I.



OVER-FED CHRYSANTHEMUMS.

EACH season we are careful to note failures as well as successes in regard to the popular autumn flower, and considering the number of cultivators that now exist who grow the plant especially for what may be termed big blooms, the former are in too great a proportion to the latter. So many grow the plants well up to a certain stage, then the troubles begin, and as we observe things, the principal cause is the too free use of stimulants, especially those of a concentrated or "artificial" nature. Over-anxiety as to whether the blooms will be open at a given date has led to nitrate of soda being used, not wisely but too well, so as to burn the roots and prevent proper development of the blooms, and also trusting this strong fertiliser to the hands of the young in experience, but whose enthusiasm teaches them that if from half an ounce to a gallon of water such wonderful results accrue, what marvellous blooms will spring from a double dose.

In mixing the soil, again, we have known these concentrated forms of manures to be added in such quantities that roots absolutely refuse to move into the new earth, and even the old roots have been killed thereby giving the plants a check from which they are not likely to recover. Why Chrysanthemums should want so much more feeding, than most other plants grown in pots we do not know. They carry big leaves certainly, but they usually get a fair quantity of earth for root space.

Two or three striking illustrations occurred within my knowledge last autumn as to the wisdom of feeding. One especially was that of a young gardener who grew a few Chrysanthemums to obtain large blooms for the first time. He rooted cuttings, duly potted them, and attended well to the watering during a trying summer, trained three growths to each plant, and did not "top" them on fancy dates, but let them grow their own natural height. Guanos were unknown as far as his small garden was concerned, and he was satisfied with the neighbouring meadow to collect his stimulant from cow and sheep manure. This was applied weak and often when the bloom buds were swelling; and superb blooms of Lady Byron, Austral Gold, Pride of Madford, Phoebus, and other well-known Japanese varieties resulted. A near neighbour was cultivating a large collection for purposes of exhibition. These were grown with intelligence and care, and throughout the season the plants were talked of and envied on account of the giant stems and huge leathery leaves. In due time they were housed, but by the time the marvellous flowers were required a change had come over the scene. The blossoms opened imperfectly and contracted, colourless and thin. These plants had been fed with all kinds of nameless mixtures, and the growth so pleasing to the eye was really soft, and what should have been "wood" was "pith." As gardeners do not differ in various localities in the matter of enthusiasm for the Chrysanthemum, these ways can be taken as similar to those in other districts, so that failures may be thus multiplied. Of all plants we know the autumn queen is the most overgrown, or rather overfed.

It would serve a useful purpose if, now that another season is before us, readers of this Journal stated their views upon this and other phases of culture. By this means, one is sure many failures might be averted during the coming autumn. Our experience is that white Chrysanthemums are the more tender rooted, and will not take stimulating manures unless in a very weak state. High-coloured varieties, again, have roots of a very sensitive nature. Some of the coarse varieties like Etoile de Lyon are not so readily overfed, nor are the yellows. It may be found also that the incurving Japanese like Oceana and Australie, with their thick florets and stout foliage, are less likely than most varieties to be spoiled by feeding. But generally, we believe using stimulants to grow Chrysanthemums has become a fad which is very much overdone, and our advice to cultivators who have hitherto not succeeded in so great a measure as the wish to look to this as a probable cause, and apply the remedy in future.—SPECIALIST.

ASHTEAD PARK.

YEAR after year the complaints become more numerous and more emphatic that owing to the deleterious elements in the atmosphere gardening in the neighbourhood of the metropolis is rapidly becoming an impossibility. It is, however, a fact that within, say, a fifteen mile radius of Charing Cross there are some of the best appointed gardens, containing the most excellent products of the gardener's skill that are to be found in the country. One establishment may be celebrated for this product or for that plant, and the aggregate brings one almost to the ideal of perfection in every phase of the art. We look, and not in vain, to the specialists to maintain the prestige of metropolitan gardens and gardening. There may be fogs and there may be smoke, but to overcome them, or rather their baneful effects, we have the determination of the enthusiastic cultivator, and so far the latter has scored. The troubles and trials may grow in numbers yearly, but with few exceptions they succumb to concentrated skill. Even within the four-mile circle of Charing Cross the interested searcher can find places where excellent fruits, flowers, and vegetables are produced, and it will probably be many a year ere this ceases to be a fact.

Of the estates where one can find many features of high

of vehicular traffic, and which the deer cross and recross at will, as there are no flanking fences to the roadway. The whole area of the park land is handsomely wooded with various kinds of forest trees, the major portion which thrive wonderfully well. Some of these are of considerable age, while others are of a comparatively modern date of planting. This variation creates the impression at one moment that the estate is young, and at another that it is old. As a matter of fact the latter would be the more correct description. Successive owners have done much not only to enhance its value (if such were desired) from a timber producing point of view, but also to add to its arboricultural beauties, and it is now rich in interest and in continuously pleasing features.

THE TERRACE GARDEN.

In the immediate neighbourhood of the mansion there is no, except what is known as the Terrace Garden, appreciable quantity of formal bedding, the more natural beauty of sweeping lawn and handsome trees being relied upon for affording suitable attractions. In the photographic reproduction (fig. 41), this particular garden may be seen, and its formal design is quite in consonance with the balustraded terrace upon which it stands and the mansion near by.

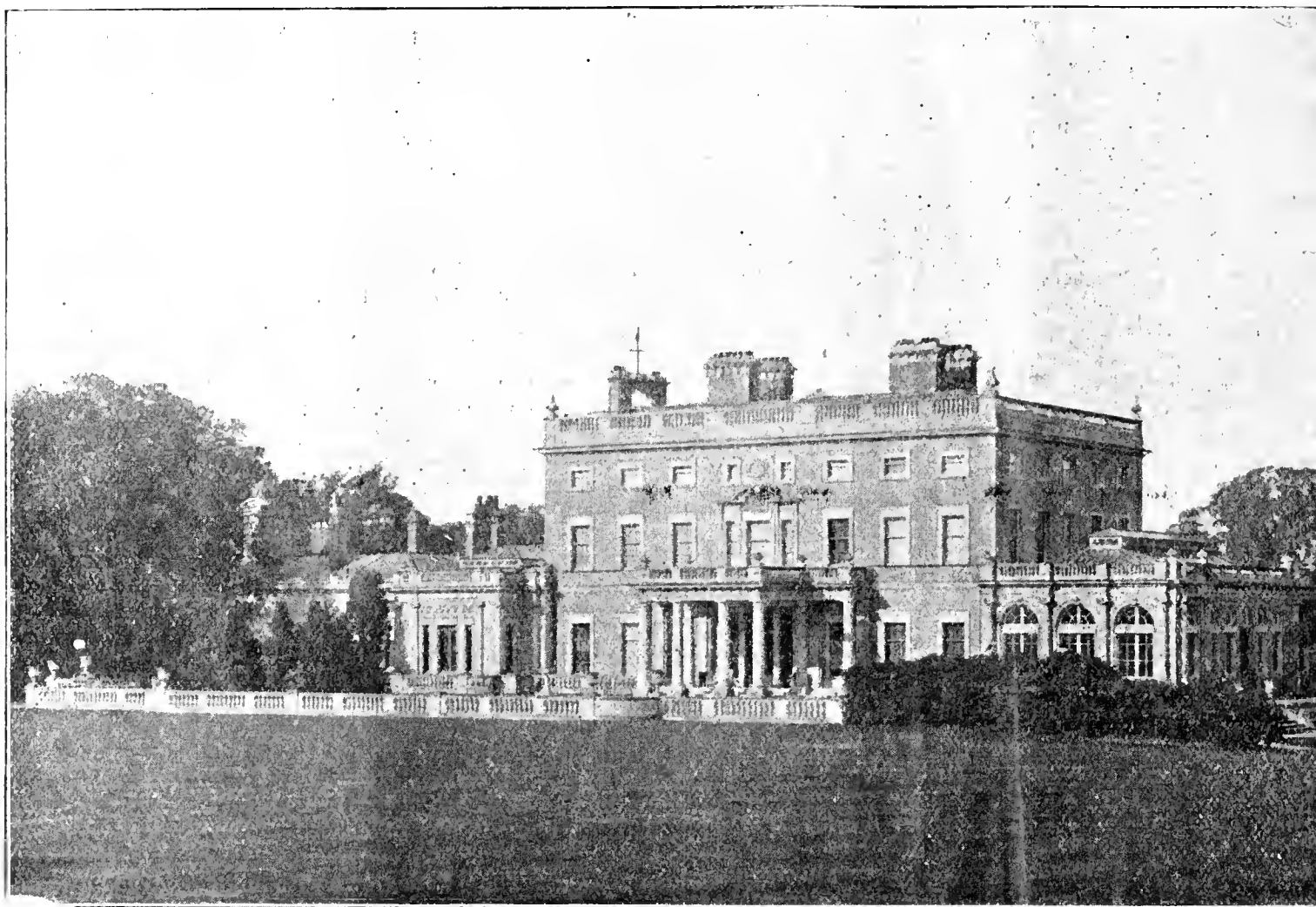


Photo by Parrett,

Leo herhead.

FIG. 40. — ASHTEAD PARK.

average quality as well as a decided specialty there are many, and amongst them must be included Ashtead Park, the residence of Pantia Ralli, Esq., at Ashtead in Surrey. This, though comparatively close to London and within a very short distance of Epsom, is most charming in its delightful park, pleasure grounds, and gardens. In no section of the estate can there be found evidence of smallness; on the contrary, the broad acres of park with the herds of deer seem to speak of the size of an estate in the deepest recesses of rural England. The presiding genius is Mr. G. J. Hunt, whose fame as a Chrysanthemum grower is great, and in these plants of course we have the specialty of Ashtead Park.

THE PARK AND ITS OCCUPANTS.

There are entrances to the park from various points, including Ashtead and Epsom, and its wide expanse with clumps of trees in suitable positions and numerous individual specimens provide a spacious roaming space for the deer, which add materially to the picturesqueness of the scene. Bracken waving in the breeze in different parts of the undulating surface affords the protection that is demanded by these attractively graceful creatures. A curious fact, and one that cannot be very common, is found in this deer park, being bisected by a public road, which is used by a considerable amount

Needless to say the several beds, large and small, receive the plants customarily relegated to such positions, and which it is totally unnecessary to enumerate. From this garden may be had a most charming view of the park, the beauty of which is increased by the fact that the main vista is down a long avenue, but through the trees on either hand may be had some peculiarly attractive peeps. Occasionally from here the road crossing the park is observed shining white between the green, but in the main it is quite obscured.

THE PLEASURE GARDENS.

There are two distinct portions of the estate that are kept within the customary fence, and which are designated pleasure gardens. One of these is naturally quite close to the house, while the other is some little distance across the park. The former finds in its trees its greatest charm, and very beautiful they are in their diversity of form and the different shapes and shades of their leafage. There are, too, both shrubs and trees, which add to the picture by the aid of flowers, and these having been judiciously placed, are distinctly adjuncts that elicit admiration. In one position another feature has been recently added in the form of a Rose garden, and this, when the plants have become thoroughly established, will prove to be a constant source of fragrant beauty and interest. Pleasure garden number two is of a

totally different character, and to many eyes would be deemed the more attractive. The secret of its beauty may probably be summed up in the skilful manner in which the lake has been formed and in the singularly artistic manner in which the margins, banks, and other portions have been planted. Here is no apparent design, and yet there must have existed an excellent one, or there could not have been such perfect harmony. All kinds of weeping plants that would thrive clothe the margins of the water, whose surface is here and there broken by many water plants. As one passes from point to point one constantly finds fresh views to appreciate, which, if limited in extent, have nevertheless charms of their own. The boathouse at the head of the lake is constructed so as to harmonise with the surroundings, and Mr. Ralli may congratulate himself on such a charming garden in, to the writer at any rate, an unexpected situation.

THE CONSERVATORY.

As may be seen in the illustration (fig. 40), the mansion is built in what is termed the Italianesque style of architecture, and has every

disappointed, as neither will be found, simply because they are not desired. Medium-sized wood thoroughly solidified, and foliage of moderate dimensions, but very stout in texture and deep in colour, are the conditions aimed at by this redoubtable grower, for these mean, with proper attention, the finest flowers—refined in appearance, of great substance, over average size, and of rich colour. Such points as these have taken the Ashted Park flowers high up on the list at many exhibitions year after year, and it is more than probable will do so again in the days to come. Though, as in all collections of Chrysanthemums grown for exhibition, Japanese play the most conspicuous part nowadays, the incurved varieties are by no means neglected, and it is to be hoped, never will be. They may be stiff and formal in outline, but the true type has a refined beauty that could ill be spared, even amongst the monster Japanese that are now the rage.

UNDER GLASS.

Some portions of the indoor department were in a state of unrest owing to alterations in several of the structures, some of which had

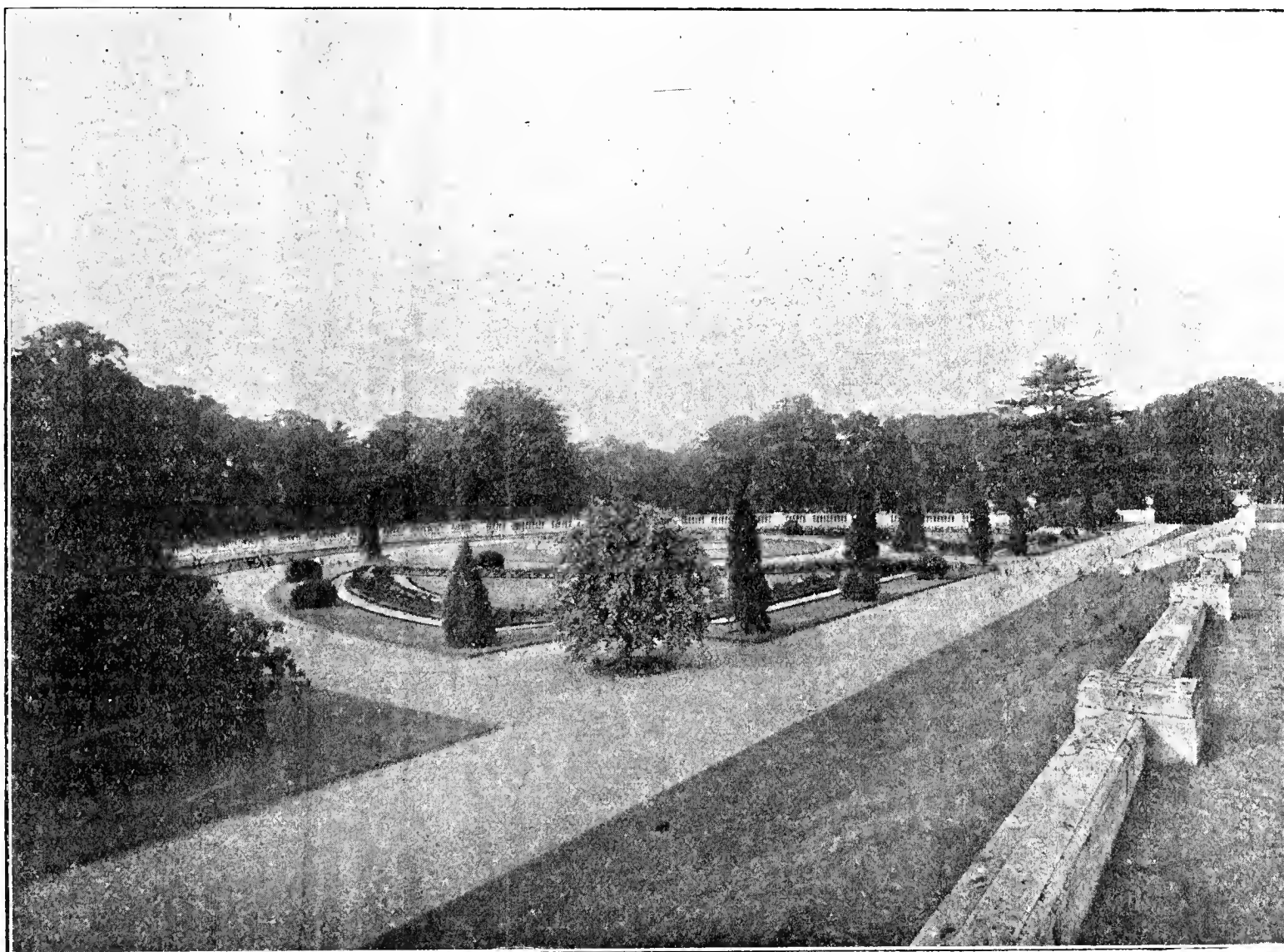


Photo by Farrell

Leatherhead

FIG. 41.—THE TERRACE GARDEN, ASHTEAD PARK.

appearance of solidity and comfort. On the right will be observed the conservatory, whose dimensions are quite commensurate with the structure on which it abuts. Its internal equipment is ornately beautiful, and such as calls forth constant expressions of appreciation from every visitor. Few indeed must be the number of conservatories that are more handsomely appointed, and in which marble forms a more tasteful and exquisitely beautiful feature. Needless to say the whole is scrupulously clean, and the handsome plants are quite in keeping with the erection. Magnificent Palms and Ferns play the most important part in its embellishment, and the softness or deepness of green in the several plants finds a delightful foil in the materials used in the construction of the house.

THE CHRYSANTHEMUMS.

Having in mind the reputation that Mr. Hunt has gained for Ashted Park in the Chrysanthemum arena, our first thoughts on entering the gardens were for the autumn queen. This visit was paid while yet the plants stood in serried rows in the open, and the trio—two visitors under the wing of Mr. Hunt—was soon closely examining the plants from the surface soil in the pots to their topmost growths. The man who travels to Ashted Park in search of immense stems and leaves will probably leave again somewhat

done much service and were being renovated practically to the point of complete re-erection. Considering that there are the customary plant and fruit houses of varying temperatures there is little need to specialise at any length. It may, however, be noted that the various fruits are accorded that close attention which alone insures the attainment of the most satisfactory results. The Vines were looking splendid, and carried many a handsome bunch of well-coloured berries. Plants are, of course, numerous and varied, as must be the case where a large establishment has to have constant supplies for different purposes. Flowers must be forthcoming at all seasons, and all useful kinds are grown in varying numbers according to their utility as measured by the amount of appreciation they receive from the powers that be.

HARDY FRUITS AND VEGETABLES.

The walls surrounding the vegetable garden at Ashted Park are profitably occupied with fruit trees of various kinds, which give crops with pleasing regularity. Many of them were carrying splendid burdens at the time of my visit, Plums and Peaches being particularly noteworthy. Pears also find a place as do they in the open quarters. Apples in bush and espalier form are numerous, and from the condition of the trees it is evident they receive intelligent care from the gardener and his staff. Small fruits, such as Gooseberries and

Currants, with Strawberries, have a considerable amount of space devoted to them, as of course large quantities are required for various purposes. In the vegetable department everything is grown. Some kinds are, of course, not greatly in demand, while to others extensive breadths of ground are exclusively devoted. On every hand one may see evidences of sound culture, and, moreover, clear indications that care is taken in so laying out the ground that while nothing is so overcrowded as to suffer, space is not wasted anywhere. Thus the best returns are secured, and the whole reflects great credit on Mr. Hunt, to whom we tender thanks for a pleasant visit to Ashted Park.—H. J. WRIGHT.

LATHYRUS PUBESCENS.

THIS rare perennial Pea is now being offered in the shape of seeds, and it is likely that those who are admirers of the charming Lathyruses will take an early opportunity of securing a supply. As I had the pleasure of being, so far as I can ascertain, the first to flower this charming Pea in the United Kingdom, I think a few notes of experience may be of service to readers of the *Journal of Horticulture*. I received the seeds through the kindness of that ardent grower of new plants, Mr. W. E. Gumbleton, who kindly sent me a few of those he had received from M. Ed. André, of Paris. I was more fortunate than the others who had the good fortune to obtain them, and raised some young plants, but all of these save one fell victims while small to the greed of the slugs. This plant was kept in a pot during winter for the first year, and was eventually turned out with the ball intact into a warm border of light soil against the gable of an outhouse facing almost south-west, and covered with a trellis, over which the plant grew. The plant was not free in growth, and while it lived seemed half shrubby in habit. It grew to about 5 or 6 feet high, but was far from luxuriant in the way of covering the trellis. In winter it had only the protection of the dead stems of some perennial Asters loosely arranged over it.

When I realised that it was so scarce, I covered it with a mat in the winter of 1898-9, and to this excessive care I attribute the loss of the plant in the spring of 1899. It had made fresh shoots below the mat, and the late frosts in March of that year destroyed these, and no others took their places. Fortunately I had saved some seeds in 1898. These passed, with the exception of a few previously promised, into the hands of Messrs. Sander & Co., of St. Albans, who have raised plants from them. It appeared to me that it might be increased by cuttings in the hands of an expert propagator, and I think the firm mentioned was successful with a very few of the cuttings I sent to them. I do not think any of the young plants raised from my seeds have yet flowered, but I expect they will do so in May or June of this year.

There can hardly be two opinions as to the beauty of this Pea, whose racemes of small lilac-blue flowers are so pleasing in every way. If, as has been said, the leaves of the plants from which the seed now offered came are glaucous, like those of the Sweet Pea, they are not the same as mine, which had distinctly pubescent leaves. I may further remark that the seeds germinate very slowly, and that it is doubtful if *Lathyrus pubescens* is hardy in the greater part of the kingdom. It is so beautiful, however, that it is worthy of a good place, and of some little care.—S. ARNOTT.

FORCED RHUBARB.

BUT for the award of a silver Knightian medal to Mr. W. Ponpart for his splendid exhibit of Rhubarb at the recent Drill Hall meeting, he would have received a cultural commendation, for all members of the Fruit Committee agreed that no such exhibit of forced Rhubarb had previously been seen at any meeting, and the one in question displayed quality such as is very rarely seen anywhere. Of course a large market grower such as Mr. Ponpart is has a great quantity from which to select his stems, but it was evident that whatever the extent of the forced crop, the average must be very high indeed. It was noticeable that none of the varieties staged excelled Victoria in colour and in general excellence; but Daw's Champion is a rather more robust variety, having a trifle broader and longer stems, and is comparatively new. Hawkes' Champagne gave stems not much more than one-half the stoutness of those of Victoria, and did not excel the latter in colour. When the old Victoria is thus shown so good forced, and we know how excellent it is outdoors, it is evident that in Rhubarbs we have not made great progress.

But such stems as those referred to are not produced solely by forcing, howsoever excellent the method. Really they have to be made by high culture the previous year, on deeply worked soil, that is heavily dressed with manure, for Rhubarb is a gross feeder, and needs plenty of manure to create very strong summer growths, which in turn leave behind extra stout crowns, that alone will produce very fine

stalks. It is such treatment the breadths of roots lifted at Twickenham, and forced, receive. The forcing was in this case done in a low greenhouse sufficiently heated, the glass roof being densely covered with litter, which at once excluded light and cold. Of course the roots were set into good soil.—A. D.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, Feb. 13th.—Present: Mr. Bennett Poë (in the chair); Mr. Hudson, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Elm-bark with Larvæ.—Mr. W. Brooks, of Weston-super-Mare, forwarded a piece of bark of an English Elm tree, with the following observations:—The Elm trees are attacked by an insect which is destroying them. Some of the trees are fine, nearly 100 feet high, and in their prime; others are smaller. The larger trees are attacked more especially on the north side; but the smaller all around the stem from bottom to top. One of the largest trees shed all its leaves in August, and it looks as if the whole of the trees will die."

Mr. McLachlan sends the following report:—"The Elms are attacked by the larvæ of a beetle. No perfect beetles are to be found in the bark sent, but there are numerous larvæ, each in a small cell, in which it will undergo its transformations. So far as can be judged from these larvæ, they are those of *Scolytus destructor*, so common in many places. In order to destroy them it was suggested, more than forty years ago, by the late Capt. C. J. Cox (who probably took his idea from the French), that all the old outer bark be pared off by a spokeshave or some similar instrument (the scrapings being of course collected and burnt), taking care not to injure the inner bark and wood. Dressings of dilute petroleum, repeated at intervals in dry weather, might also be of service. But the subject opens up a wider question—viz., whether the beetle is the cause of the condition of the trees, or only steps in where these latter are in a moribund state from some other cause. The writer of these remarks is inclined to think the beetles come as scavengers. At any rate in the case of tall old trees, probably already "stag-horned," it is practically useless to employ remedial measures, and the best thing is to cut them down and burn them, or at any rate cart them away at once from the vicinity of trees not already attacked. The bark of such old trees is usually riddled by the larvæ from base to top. When the trees are younger and less tall remedial measures, such as those suggested, might be tried. Even supposing the trees to be in an unhealthy state from some other cause, the attacks of the beetle must aggravate that state and hasten decay, and if these attacks could be lessened or averted there might be a chance of the trees recovering from the other conditions whatever they may be. But as a rule disease or decay have already proceeded too far before being discovered."

Fern roots attacked by grubs.—Mr. Burt, of The Gardens, Caenwood Towers, Highgate, sent a specimen of soil and grubs with the rhizomes of *Adiantum cuneatum*. Mr. Hudson observed that he was not unfamiliar with them. The specimen was forwarded to Mr. McLachlan, who reports as follows:—

"The grubs at the roots of *Adiantum* are those of a species of weevil probably *Sitones*, but I cannot commit myself to anything more precise without seeing the perfect insects. I should think the best thing to do now would be to turn out the plants from the pots, shake the old soil from the roots, and repot in clean earth, taking care to burn all the old with the grubs. When the foliage shows signs of being attacked go over the pots at night, turn each pot gently on its side, and shake the foliage over a sheet of paper. By this means multitudes of the perfect insects may be collected and destroyed, and the deposition of eggs prevented."

Orobanche on Pelargonium.—A plant in flower was received from Frances M. Cooper, Forest Road Gardens, Wokingham, described as having "established itself in a pot of *Geranium*." The latter at first showed no sign of diminished vigour; but now the specimen has come into bloom its host-plant seems to be weakly and its leaves are turning yellow. The plant does not seem quite like any wild species." The *Orobanche* was of a purple colour throughout, but not agreeing closely with any true British species.

FORESTRY AS IT AFFECTS MATERIAL PROGRESS.—The fertility of the soil and the material progress of the human race cannot be maintained without forests. It is not necessary for me to argue this point. It is sufficient to say that those who have watched the rapid deforestation of the middle and eastern States have for a number of years advocated some method of preventing the wholesale destruction of trees. In some of the older States there are areas once clothed with fine forests, but now being without trees have become almost valueless. These are being bought by the State at great cost, and an attempt made at reforestation. I have maintained, says a writer in a transatlantic journal, for years that Wisconsin should withdraw all her timber lands from the market. I am quite sure that all timber lands that have been sold by the State for the past ten years have been purchased solely on a basis of what the timber will be worth.

CAMPANULA GRANDIFLORA PUMILA.

THE stately perennial which is variously known as *Platycodon* or *Campanula grandiflora* is a favourite occupant of many gardens, its large, open, deep blue flowers being produced most freely. This and some of its varieties reach the height of 2 or 3 feet, and therefore either require permanent corners and similar sites, or they must be placed behind other dwarf-growing border plants. A variety possessing all the good qualities of the ordinary *C. grandiflora*, but with a considerably dwarfer habit, is that represented in the woodcut (fig. 42), *C. grandiflora pumila*. This grows 9 to 12 inches high, produces flowers similar to the type in size and colour, and forms a beautiful specimen, as it soon becomes covered with flowers. The plant is well adapted for culture in pots also, and is readily increased by seeds. Any ordinary garden soil that is not excessively heavy or wet suits it.

FLOWERING PLANTS FROM SEED.

RHODANTHES.

THESE half-hardy annuals are of an exceptionally showy character as pot plants for conservatory decoration in early summer. They are raised from seeds, which can be sown in the pots in which the plants are intended to flower, or the seedlings may be transplanted into the flowering sizes. Five-inch pots are the most suitable. In preparing these place liberal drainage at the base, and cover with moss or some fibrous material. The compost should be light and rich, and formed of equal parts of peat, loam, and leaf soil, with a little decayed manure and coarse sand. Fill the pots to within half an inch of the rim. Press smoothly, giving a gentle watering. When drained sow the seeds equally over the surface half an inch apart, and cover with a layer of fine compost. A little gentle heat will assist germination, and after the seedlings have pushed through the soil transfer to a shelf near the glass in a warm structure so as to encourage unchecked growth. The seedlings ought, however, to be gradually thinned to an inch apart. By the time the seedlings have attained a height of 6 inches, four neat stakes may be inserted at equal distances round the edge of pot, to which strands of matting should be attached for the support of the plants. Weak liquid manure will be an encouragement to growth, giving clear water as necessary. Still keep the plants on an airy shelf in the greenhouse. The individual plants are of slender growth, but in the aggregate produce a creditable display of bloom.

VERBENAS.

Verbenas are attractive bedding plants, and, though frequently perpetuated by cuttings from year to year, may be quite as readily propagated from seeds. Plants raised from cuttings are probably less vigorous, which is an advantage as regards flowering, but seedlings given plenty of room and not over-rich soil, may be expected to flower well. The chief colours in Verbenas are scarlet, blue, and white. A mixed packet of seeds of a reliable strain will produce these colours in good proportion. Prepare well-drained pans and fill them with a compost of sandy light soil. Smooth the surface and give a gentle watering with tepid water. Sow the seeds thinly, covering them with a layer of fine soil, which may be dredged through a fine sieve. Press it down smoothly, then place the pan in a brisk heat of 65°. Shade with glass and paper to maintain uniform moisture in the soil without the inconvenient recourse to watering before the seeds germinate. When the third leaf is formed on the seedlings transfer them to boxes of similar soil 1½ inch apart, and place near the glass to grow and strengthen. A further transplanting of the seedlings will be no detriment, but an advantage. Top those frequently that grow vigorously, as some seedlings are likely to do. Plant out in their flowering positions in beds at the end of May.

CARNATIONS.

Carnations are amongst the most popular of plants, and in addition to growing them from layers and cuttings, an interesting collection may be produced from seeds. The early flowering section represented by Marguerite Carnations respond most readily to this method of propagation by flowering the same year as sown. The ordinary Carnations may also be grown from seeds, but they should be sown in summer for flowering the following year. The Marguerite Carnations do not possess the qualities of the best named varieties, but they are, nevertheless, extremely useful for a variety of purposes. They usually commence to bloom in August, and continue doing so until frost stops them. The range of colour is wide, the flowers being mostly self-coloured, and they compare favourably in size to some of the choicer varieties of Carnations.

To obtain good plants which will produce a quantity of bloom seeds should be sown in February or early March. They may be sown in a pot or shallow seed pan, well draining the receptacle and covering the drainage with some of the rougher parts of the compost. This need not be of an elaborate character, but a simple porous mixture of

good loam and leaf soil free from worms, with silver sand mixed in. Fill the pot or pan to within an inch of the rim, pressing the compost gently down, and leave the surface smooth. Afford a supply of water through a rosed can, so that moisture is fully insured. When well drained sow the seeds on the surface, covering by dredging fine soil upon it. Flatten the soil with the base of a small pot. Place in a temperature of 60°, covering the pot or pan with glass and paper as a safeguard against undue evaporation. If stood on a moist warm base little or no water ought to be required until the seeds germinate. Admit light and air when the seedlings push through the surface, and increase gradually until the glass is entirely removed. Then stand the pot on a shelf close to the glass in order to prevent the stems of the seedlings elongating and weakening the plants.

This treatment is continued for a few weeks, giving water as necessary, until the seedlings are of a sufficient strength to be pricked out in fresh soil. This must be placed in boxes, having some drainage at the bottom, and be filled with soil similar in composition to that



FIG. 42.—*CAMPANULA GRANDIFLORA PUMILA*.

used for sowing, but a little rougher in character. It is, however, no hard and fast rule to use boxes, a bed made similarly in a frame on half-spent hotbed is an admirable place for the seedlings. Prick them out 2 inches apart, sinking them to the lower leaves. Under the influence of warmth and moisture, by keeping them in a rather confined atmosphere at first, the seedlings will soon root freely and grow strongly. Afford plenty of light, but prevent strong sunshine distressing them. As they become established, give increasing supplies of air, and less heat if the boxes are stood in a warm house. The conditions in a frame must be regulated by the supply of air. Give adequate quantities of water, but avoid overwatering, which will prevent the steady progress so desirable. Early in June the plants will be ready for planting out in a bed of fertile soil in an open position. The ground is best prepared by deep digging and breaking up the subsoil, adding material of a light character, such as potting soil and leaf mould, rather than rank manures. Strong plants may be placed a foot apart, weaker a little closer. The space between renders hoeing and weeding more readily

carried out. Numerous flower spikes will be produced in July, and those which have the tendency to lay on the ground should be lightly supported, so as to show off the blooms to the best advantage, as they continue to open from August onwards.—E. D. S.

ROYAL GARDENERS' ORPHAN FUND.

THE annual meeting of this most deserving Institution was held on Friday, February 16th, at the Essex Hall, Essex Street, Strand, under the presidency of A. W. G. Weeks, Esq. The numbers present were very limited, and included Messrs. W. Roupell, H. B. May, C. E. Osman, R. Dean, W. Poupert, A. Dean, J. F. McLeod, G. Gordon, J. Fraser, R. W. Alderson, H. J. Jones, J. Lyne, G. T. Miles, P. R. Barr, R. Cuthbert, J. G. Veitch, J. Melady, G. Richards, W. Bates, and G. Assbee. The notice convening the meeting and other preliminaries having been disposed of, attention was turned to the report of the Executive Committee for the year ending December 31st, 1899, which, with the financial statement, we give herewith.

REPORT FOR THE YEAR 1899.

In presenting their twelfth annual report the Committee have pleasure in congratulating the subscribers on a year of steady progress, the receipts from all sources showing an increase of £75 1s. 2d., which is satisfactory as indicating that, notwithstanding the great difficulty experienced in collecting subscriptions, owing to the many urgent appeals made to the benevolent for support in aid of the various patriotic funds, the Royal Gardeners' Orphan Fund has not only been able to hold its own, but also to increase the amount of the year's aggregate allowances made to the orphans. The revenue derived from subscriptions and donations, though showing an increase on the previous year, reveal a sensible decrease in the amount collected by local secretaries, a circumstance which the Committee can only regard with some anxiety, though they have reason to believe that the falling off in this source of income is only temporary, the result being due rather to the difficulty experienced in collecting subscriptions than to any slackening of the efforts of those who have hitherto done so much in support of the Fund. In common with most other charitable institutions, there is only too much reason to fear that the Fund may suffer from the pressure of the times during the coming year, but the Committee sincerely trust that the supporters of the Institution will assist them to the uttermost in their efforts to avoid such a deplorable contingency. To maintain the usefulness of the Fund unimpaired should be the aim of every one interested in gardeners and gardening, and the Committee more especially appeal to gardeners themselves to increase their efforts on its behalf by collecting small sums in their own districts.

The number of children who have been elected to the benefits of the Fund during the past eleven years is 113, and the total amount which the Committee has been enabled to distribute among the destitute orphans during that period is £7711 2s. 6d. The number of children now on the Fund is seventy-two, exclusive of those to be elected this day.

The Committee desire to acknowledge with grateful thanks the keenly appreciated services rendered to the Fund by Alderman Sir Reginald Hanson, Bart., M.P., who so kindly presided at the annual festival, and whose cordially expressed appreciation of the work carried on by your Committee, and his most forcible appeal for support on its

behalf resulted in a subscription list amounting to £602 12s., a result which was the more gratifying in that the festival had, for unavoidable reasons, to be held at a later period of the year than usual. The Committee have much pleasure in recommending that Sir Reginald Hanson be this day elected a Vice-President of the Fund.

It is with extreme pleasure the Committee make the announcement that Lord Battersea has very kindly consented to preside at the next festival, which has been fixed to take place on Tuesday, May 8th, at the Café Monico, 46, Regent Street, W.

The Committee sincerely deplore the loss which the Fund has sustained by the death of Mr. Sydney Courtauld, one of the Trustees, whose kindly support in its earlier days remains with the Committee a cherished memory. Mr. William Sherwood, the eldest son of the Treasurer, has kindly expressed his willingness to undertake the duties and responsibilities of the office of Trustee, and the Committee with great pleasure ask subscribers this day to confirm their choice.

By the recent death of Mr. Alfred Outram the Fund has also lost the services of another devoted worker, and the Committee a colleague whose genial presence and whole-hearted sympathy with the objects of the Fund will be greatly missed. The seat vacated by Mr. Outram's death has been filled by the election of Mr. Peter E. Kay, Clagmar, Church End, Finchley. The resignation of Mr. J. Cheal has also been received, and the vacancy filled by the election of Mr. W. R. Alderson, Bell Farm, Hersham Farm, Walton-on-Thames.

The members of the Committee who retire by rotation are Messrs. W. Bates, R. Dean, H. Herbst, H. J. Jones, W. Marshall, H. B. May, G. Reynolds, and A. W. G. Weeks; and Messrs. Bates, Dean, Jones, May, Reynolds, and Weeks being eligible, offer themselves for re-election. Mr. Whitpaine Nutting, 106, Southwark Street, S.E., and Mr. E. G. Monro, Covent Garden, W.C., are nominated by the Committee for the vacant seats.

The retirement of Mr. Marshall and Mr. Herbst is an incident in the history of the Fund which your Committee cannot but deeply regret, and their colleagues desire to place on record their high sense and appreciation of the valuable moral and material support which these gentlemen have so ungrudgingly rendered to the Fund. Mr. Herbst, one of the founders of the Fund, was one of the most constant attendants at the meetings of the Committee until struck down with illness, from which he has unhappily not yet recovered, and the Committee ask the subscribers to signify their appreciation of his good and faithful service by according him their special thanks. Mr. Marshall's services to the Fund as Chairman since the lamented death of Mr. George Deal in 1890, have been invaluable, and as a slight recognition of the uniformly courteous and efficient manner in which he has so long and so faithfully discharged the duties of his office, the Committee have the pleasure this day of nominating him for election as a Vice-President.

The Committee again most cordially acknowledge the generous and most practical manner in which the Treasurer, Mr. Sherwood, has continued to assist the Fund, and warmly thank him for his valued services during the past year. To the Auditors, Mr. Martin Rowan and Mr. Peter Rudolph Barr, the hearty thanks of the Committee are accorded for their patient and exhaustive audit of the accounts. Mr. Rowan is the retiring Auditor, and is nominated by the Committee for re-election.

The Committee are unanimous in nominating their Secretary, Mr. Brian Wynne, for re-election to that office.

CASH STATEMENT FOR THE YEAR 1899.

RECEIPTS.			
To Balance from last Account ...	£658	13	5
„ Subscriptions, General ...	£29	4	8
„ Ditto Collected by Local Secs. ...	55	7	0
	345	11	8
„ Donations, General ...	245	2	1
„ Ditto Collected by Local Secs. ...	33	11	1
	278	13	2
„ The Emma Sherwood Memorial ...	13	0	0
„ Annual Dinner ...	602	12	0
„ Advertisements in List of Subscribers ...	27	18	0
„ Miscellaneous Receipts ...	3	3	7
„ Dividends on Stock and Interest on Deposit ...	273	17	5
	£2203	9	3

NOTE.—INVESTMENTS:

2½ per cent. Consols ...	£7070	6	10
3 per cent. Canada Stock ...	2000	0	0
L & N.W. Railway Pref. Stock ...	340	0	0
Thomson Memorial Trust:			
East Indian Railway B. Annuity of £14 (cost) ...	430	11	0

Having inspected the Securities and examined the Books and Vouchers supplied to us, we hereby certify the above Account to be correct.

Dated January 30th, 1900.

EXPENDITURE.			
By Allowances to Orphans ...	£916	15	0
„ Emma Sherwood Memorial ...	13	0	0
„ Grants in Aid ...	13	17	6
	£973	12	6
„ Annual Dinner ...	155	9	1
„ Secretary's Salary ...	99	13	0
„ Printing and Postage List of Subscribers ...	27	9	6
„ Printing and Stationery ...	£33	17	3
„ Annual General Meeting and Audit ...	16	7	2
„ Hire of Room for Meetings ...	2	2	0
„ Advertising ...	2	0	7
„ Illuminated Vote of Thanks to Mr. Barron ...	5	0	0
„ Postages ...	14	0	7
„ Bank Charges ...	2	13	9
„ Sundry Expenses (Petty Cash) ...	4	19	5
	£81	0	9
„ Balance—			
Cash at Bank ...	£728	14	0
Cash in Hand ...	37	10	5
Cash on Deposit ...	100	0	0
	£866	4	5
	£2203	9	3

(Signed) P. RUDOLPH BARR, } Auditors.
M. ROWAN.

These were taken as read, and in rising to move their adoption the Chairman made one of the shortest speeches on record, as he contented himself with the assertion that they were in all respects satisfactory. Mr. W. Roupell, in the capacity of seconder, was equally brief. The

Secretary at this juncture read a letter from the Bournemouth Gardeners' Mutual Improvement Association, which embodied a protest against more than one member of any family deriving benefit from the Fund at the same time. Mr. R. Dean proposed that the

letter be referred to the Executive Committee to deal with, asserting at the same time that where more than one member of a family were recipients subscribers might be sure that the case was urgently necessitous, or the Committee would not have recommended it. Mr. H. J. Jones supported this, as did Mr. Roupell, who was distinctly in favour of generous treatment, as he was of the opinion that it was desirable to do the utmost good with the funds at disposal, and thought that subscribers would rally round the Institution in proportion to the amount of real service that it did for the orphans for whose benefit it was constituted. These little points having been disposed of, the motion that the report and balance-sheet as in the hands of those present be accepted was carried with acclamation.

Mr. Weeks then rose to propose that Alderman Sir Reginald Hanson, Bart., M.P., who it will be remembered presided at the Society's last annual dinner, and which was such a signal success, be elected a Vice-President of the Fund, and further that Mr. William Marshall be elected to a similar position. The latter gentleman has long been Chairman of the Executive Committee, but has unfortunately felt compelled to relinquish that position owing to its taking him out at night, which was detrimental to his health, and it was therefore desired that, while regretting the loss of his valuable personality in the active work of the Society, that he be added to the list of Vice-Presidents. Here again Mr. Roupell was seconder, and the proposal was carried unanimously.

The much regretted death during the past year of Mr. Sydney Courtauld made it necessary that a fresh Trustee should be elected, and the Chairman nominated for the position Mr. William Sherwood, son of Mr. N. N. Sherwood, the highly esteemed Treasurer of the Institution. Mr. R. Dean seconded this proposition, and there was no dissentient voice when it was put to the vote. It must be superfluous to say that Mr. N. N. Sherwood was re-elected Treasurer, and heartily thanked for the valuable services he had rendered to the Society in the past. As the rules of the Fund necessitate one Auditor retiring annually Mr. M. Rowan (of Carnation fame), who is associated with Mr. P. Rudolph Barr in this capacity, was proposed by Mr. G. Assbee for re-election. Mr. W. Poupart was the seconder, and everyone present was emphatically agreeable, as was evidenced by the unanimous, "All."

Mr. Alexander Dean proposed that Messrs. W. Bates, R. Dean, H. J. Jones, H. B. May, G. Reynolds, and A. W. G. Weeks be re-elected members of the Committee. In support of these nominations he alluded to the satisfactory condition of affairs in general, and considered this sufficient evidence as to their suitability for service. He further intimated that in case there came a time when the Institution was overburdened with funds they should make orphans over seventy years of age eligible for benefits, and coupled with the suggestion that both the Chairman of the meeting and his brother, Mr. Richard Dean, having passed the allotted span, might be the first recipients. Mr. Weeks intimated his willingness to accept of this. The portion of Mr. Dean's proposal relating to the Committee having been supported by Mr. J. Fraser, was carried, and we may assume that the second portion will stand over for the next half century or so. Mr. J. G. Veitch proposed, and Mr. P. R. Barr seconded, that Messrs. Whitpaine Nutting and E. G. Monro be elected members of Committee in place of Messrs. W. Marshall and H. Herbst, who resigned. This was carried. In reference to the last named gentleman, Mr. Weeks proposed that he be heartily thanked for the active support he had accorded to the Society for many years, and this receiving the support of Messrs. H. B. May and W. Bates, was also carried unanimously. On the motion of Mr. Weeks, seconded by Mr. Assbee, Mr. Brian Wynne was re-elected Secretary for the ensuing year, and both speakers eulogised the services Mr. Wynne had rendered. Messrs. W. Bates, W. Poupart, R. W. Alderson, J. F. McLeod, R. Dean, and H. J. Jones were then elected scrutineers of the ballot, and the meeting was adjourned until 4.30.

RESULT OF THE BALLOT.

Punctually at moment stated, Mr. W. Poupart, on behalf of the scrutineers, announced that the ballot had resulted as follows:—Hilda K. M. Rogers, 506; Aaron Hall, 470; Winifred Moxham, 429; Charles A. Dranfield, 427; John Baird, 254; Edward White, 237; George W. Stevens, 153; Margaret M. Wood, 148; Sarah C. E. Langley, 135. These, therefore, were elected. It was then announced, and was splendidly received, that the finances were so satisfactory, that Arthur G. Stephenson, 130; Ernest S. Henderson, 105, who were also on the balloting paper; and Frederick G. King, J. G. Riddle, and Mary Alice Wood, whose nominations had come too late for inclusion, but which were known to be deserving, could be placed on the Funds, and this having been put to the meeting, was carried with acclamation, and we may add, fittingly crowned a successful meeting, which was brought to a close with a vote of thanks to Mr. Weeks for his services in the chair.

BURNING LEAVES.—The Board of Health of Plainfield, U.S.A., is said to be considering the question of adopting a rule which will prohibit the burning of leaves within the city limits, as it is claimed that the practice is conducive to much ill-health during the autumn season. Several physicians have said that the smoke and smudge which come from burning leaves are the cause of many of the ailments of the throat, lungs, and eyes.

DEATH OF MR. P. W. FAIRGRIEVE.

MR. PETER WALKER FAIRGRIEVE died suddenly at Dunkeld House on Thursday, the 15th inst., where he has been head gardener for a quarter of a century, first under the late Dowager Duchess of Athol, and for some years under the present Duke of Athol. The sad intelligence of the removal of this talented and popular horticulturist will be received by many friends with deep regret. He was a great enthusiast in all matters associated with gardening, but distinguished mostly for the part he took in the development of hardy fruit culture, and has been a large exhibitor of these fruits, as well as a lecturer



FIG. 43.—MR. P. W. FAIRGRIEVE.

on their cultivation. At Dunkeld Mr. Fairgrieve had considerable scope and favourable opportunities for testing the qualities of outdoor fruits, and the proving of such as were suited to the northern climate. The fine walls, shelter, and good soil and position of the garden were taken full advantage of; while the attention to cultural details gave evidence of Mr. Fairgrieve's knowledge and unremitting attention to that most useful branch of gardening.

The great gathering of gardeners which was held some years ago from all parts of the country is well remembered by most of us. The keen investigation of trees and fruit, and the discussions which took place, gave much pleasure and instruction to all. A splendid entertainment was given in the Town Hall of Dunkeld to the visitors in the form of a banquet. The Dowager Duchess backed Mr. Fairgrieve in his efforts to render success complete. Mr. Fairgrieve was a Gallowayshire man. His experience in gardening was wide and practical. After years of apprenticeship and journeyman the deceased went as foreman to Wemyss Castle, Fifeshire. He went as foreman to Dunkeld, then as head gardener to Duncrub, near Perth, whence he returned as head gardener to Dunkeld.

THE YOUNG GARDENERS' DOMAIN.

BITS FOR THE BOTHY.

FIGHTING THE BORES. (Continued from page 124.)

"WHAT a bore!" This from many a youth at the mere thought of studying in any shape or form; and this from those who are really the best of good fellows. There is always something very taking and very contagious about these "happy-go-lucky" kind of boys, who, without words, tell you in the language of eyes and actions, that this old world of ours is a very jolly kind of place to live in. We could not do without them—these veritable sunbeams of life, but they must be caught—trapped into a steady purpose, instead of flickering out their existence on a scene behind which lays so many stern realities. Their thoughts, plans and actions run freely into any mould, but will not keep shape. This must not be. One particularly bad case was doctored by the "O. B." some years ago, and, happily cured; otherwise the question of isolating the patient to prevent infection by this high fever of life would have been seriously considered. The course of treatment pursued will be sufficient recipe for others to cure themselves if they will adopt it.

"A—, I want you to copy out this list for me, after tea; take it into the bothy." A— took it with heightening colour and, apparently, some suspicion. After tea a visit to the bothy found the decks cleared and A— in action, literally sprawling spread-eagle fashion over the foolscap as his mouth twitched and twisted in sympathetic movement with the pen. Sitting down, our young scribe was watched and waited as he twisted and wriggled to a finish; muffled sounds overhead testifying to the enjoyment extracted by comrades aloft from the martyr's sufferings below. The pen, of course, was "a bad 'un," and he "could do it better with a pencil." "Will it do, sir?" "Yes, very well (it answered present purposes); "but you want practice. You are going to be a head gardener, some day, are you not?" "Yes, sir," as the eye which showed a suspicion of moisture brightened considerably. "Well, you know a good head gardener must be a good scholar, so practise an hour's writing every week night, except Saturday night, to the end of the month, and I will look in and help you—say from seven till eight o'clock."

Poor A—, he would never have tackled that bore singlehand, but between us we ousted him; yet it is believed that had the six consecutive nights in the week been insisted upon he would not only have run away, but his fighting days would have been over. This

small but important victory was followed by a regular monthly plan of campaign, the time being increased by half an hour, with certain variations in the tactics to keep the bores at bay. Many attempts were made by the enemy to recover lost ground, and it was evident enough to an old soldier that this young recruit was the hero of a hundred fights. Ere a new year's day came round the field of operations was secure, and very little scouting by the "O. B." was necessary. Just a little scheming to make the monthly plan fit into the season of the year and critical reviewing to mark progress. At the new year A—was started with a diary and a box of drawing tools as longer range missiles for one who had gone from strength to strength, and was now more than conqueror. Just the plain, unvarnished picture of a young life. No more. There is pleasure and pride, however, in adding the sequel. The A—now occupies a higher position than his one time master.

"Humph!" some will say, "don't see where we come in." Well, young friends, this is where you come in—in this "Domain," and can we persuade our esteemed commander-in-chief, the Editor, to enlarge it in his own good time by giving the old mentor a little more license, and yourselves a little more liberty, it will be our mutual prerogative to "take occasion by the hand and make the bounds of freedom wider yet." You will, as well, be brought into touch—direct touch—with the great world of gardening whose future is your heritage. A great responsibility, is it not? This future—viz., your future and the future of gardening, which is slowly but surely being interwoven by the hand of Time; but, "Forewarned is forearmed," or should be. That many already enjoy all the good counsel and sympathetic assistance their own particular officer is able to give goes without saying; but there are, in the aggregate, battalions of recruits who are wholly, or in part, deprived of this help by unavoidable circumstances remains, nevertheless, a fact.

Apart from this, no man, young or old, can march with the times unless he keeps himself posted up in current events which directly or indirectly concern him. Every bothy in the kingdom should have its weekly budget of high-class gardening news. However it is obtained, it must be had. In many cases, of course, it goes from the gardener's house to the bothy, oftentimes with the injunctive threat, "If you lads don't keep this paper clean, you won't get it any more." It is an old trick with these gardening papers in the bothy of tearing themselves, losing their leaves, gathering up all the grease spots and dirty finger-marks—doing all they can, in fact, "just to get chaps into a row." Sometimes the foreman "whips" it off to his room, and gorges it by himself; at other times it never comes at all. To sum up, this spasmodic supply of gardening literature to the bothy is very unsatisfactory. 'Tis strange, passing strange, that what should be first is thought of last, and perhaps least.

The curious part of the matter is that there is no grudging of pence by our lads of the bothy for reading matter. In some a daily paper and sundry weeklies are common enough, whilst the more luxurious magazines, with their stores of light or heavy mental ammunition, have come to be almost a necessity; but there are lots of bothies, half of the whole garrison probably, in which a gardening paper, if it does not reach them through a charitable channel, never reaches them at all. Why is it so? Young Britons, of course, want to know how the war is getting on, and how the world wags generally. That naturally accounts for the newspaper; and then there are "Scraps," "Tit Bits," and "Comic Cuts," for each boy's particular taste. All that is right enough we know; but what we want to know is, where the literature of your life's work comes in? Every bothy should have its high-class gardening paper every week, and all the week; and if it is finger-marked, dog's-eared, and generally dilapidated by the time the fair fresh number appears, it will at least show that it has done its duty, and the boys have done theirs. Read the war news, boys; laugh at and enjoy your pennyworth of the light side of life if you will, or share the brief triumphs of "'tects" and mystery-mongers if you must; but do not ignore the gospel of your own high calling! Still, some will say perhaps, "Oh! we can't afford a gardening paper after buying so-and-so, and so-and-so." The obvious course, then, is to buy it first; and if you still cannot afford it amongst you, perhaps your sharper eyes can see that way of affording to do without it, which is not in sight of—THE OLD BRIGADIER.

(To be continued.)

CANNAS.

THESE beautiful plants do not seem to be so universally grown as they deserve. Their fine spikes of bloom, of rich variable colours, add greatly to the beauty of the greenhouse during the spring and summer months. To have plants in flower in spring a number of old plants must be shaken out immediately, carefully removing as much soil as possible, and cutting off last season's growth. Divide the roots, and place into well-drained 5 and 6-inch pots in a compost of rich fibrous loam, with half the quantity of peat, and a liberal addition of broken charcoal and coarse sand. They should then be placed in a house in a moist growing temperature, or a heated pit would answer the purpose equally as well. Shade when the sun gets very bright, and syringe frequently, which will keep their worst enemy (red spider) in check. When the flower spikes show colour transfer them to a cooler house, where they will remain in flower for a considerable length of time.

There are a great many varieties, but some of the best are Queen

Charlotte, Marceaux, Italia, Asia, aurea, Duchess of York, Admiral Avellan, and C Henderson. As the plants finish flowering put them in a cold frame, and eventually store on shelves in a cool house or shed, where they are protected from frost.—E. B.



FRUIT FORCING.

Cucumbers.—In houses where red spider has appeared on the winter-fruited plants, coat the hot-water pipes with sulphur and lime in equal parts, formed into cream with water, heating the pipes to as near boiling point as possible for a couple of hours on a calm evening, the house being kept close, and then allow the pipes and house to cool down to their regular temperature. The foliage must be thoroughly dry. The same process may be repeated in the course of a few days. It is generally effectual against white fly, thrips, and mildew, as well as red spider.

Plants in bearing should be examined once or twice a week for the removal of bad leaves and exhausted growths, thinning the shoots, stopping, and clearing them of old or deformed fruits. The thinning of the shoots, and encouraging young in place of spent growths, is the way to keep the plants in continuous bearing. Stop the growths a joint or two beyond the show of fruit, but avoid overcrowding. Maintain the bottom heat steadily at 80°, the night temperature at 65° to 70°, 5° less in severe weather, 70° to 75° by day, rising to 80° or 85° from sun, and closing early in the afternoon so as to run up to 90°, 95°, or 100°, damping the paths and other surfaces in the morning and early in the afternoon.

Young plants should be planted in ridges or hillocks, about 2 feet wide and 10 inches deep, formed of turfy loam laid up sufficiently long to destroy the herbage, mixing with about a fourth of well decayed manure. Plants for trellises should be trained with a single stem, secured to a stick tied to the lowest wire of the trellis, rubbing off the laterals as they appear until the height of the trellis is reached. The plants in pits and frames should be stopped at the second rough leaf, and the resultant growths at about every foot of extension. This will give plenty of shoots for bearing, which must not be crowded, and should be stopped at a joint or two beyond the show for fruit. If the sun be powerful, and the plants show indications of flagging, shade for a few days.

Pines.—*Plants Starting into Fruit.*—Those plants started at the new year by an advanced temperature and moisture will now be showing fruit. The temperature about them may be maintained at 65° to 70° at night, and 75° to 80° in the daytime under favourable circumstances, ventilating at 80°, allowing an advance to 85°, and close about that figure. With fruit advancing the plants will require more water at the roots, examining the whole stock once a week, but supplying it to such plants only as need it, always in a tepid state, and with a little stimulant in it, as guano or some approved fertiliser. Recently started plants to afford a succession of fruit should have a night temperature of 65°, and 70° by day, which, with a rise of 10° to 15° from sun heat, will be sufficient for them for some time longer.

Vines.—*From Eyes.*—Buds inserted a short time ago have rooted, and if in small pots they may be shifted into a larger size as soon as the roots reach the sides, standing the pots on slate or tile shelves over hot-water pipes in preference to plunging them in bottom heat. If the eyes were inserted in pots or pans several together they may be placed in small pots singly, plunged in bottom heat, and when the roots reach the sides transfer them to 6-inch pots. Syringe well amongst them, and stop the laterals at the first joint.

Early Vines in Pots.—Top-dress with rich turfy loam and decayed manure in about equal parts, placing rims of zinc or turves round the tops of the pots, and when the roots are working freely in the top-dressing sprinkle a little fertiliser on the surface occasionally. Keep the laterals well in hand, avoiding crowding the trellis with foliage that cannot be fully exposed to light. Ventilate early in the day, affording a little air at 70°, increasing it with the heat to 85° or 90°. Avoid cold draughts, as they are prolific of rust, and impair the assimilating power of the foliage.

Early Forced Planted-out Vines.—The Vines started early in December must have the thinning of the berries attended to as soon as they are well set. Endeavour to obtain compact bunches, tying the shoulders in preference to cutting out a large number of berries. Remove superfluous bunches unflinchingly, striving for a full crop of well-furnished bunches, properly swelled, and perfect in colour and finish. Allow the laterals to extend beyond the bunches as far as is consistent with the exposure of the foliage to light, tying and stopping them as required. Afford a liberal supply of water or liquid manure as required to maintain the soil in a moist state, and mulch with an inch thickness of sweetened horse droppings. The night temperature may

range from 60° to 65°, 70° to 75° by day, with 10° to 15° advance from sun heat. Ventilate from 70°, and close between 80° and 85°, damping all surfaces well at the time. Do not syringe the foliage, as there is danger of sediment—a deposit on the berries.

Vines Started at the New Year.—Commence disbudding when the best shows for fruit can be determined, the object being to give the shoots left the benefit of full exposure to light and concentrate the forces on them. Allow at least two joints beyond the fruit in stopping, pinching laterals below the bunch to one joint, but those level with or above the fruit may be allowed to extend as space permits. When in flower afford a night temperature of 65° to 70°, with 10° to 15° rise from sun heat, closing at 80°. Vine flowers set best when the atmospheric moisture is not excessive. An over-moist, or, on the other hand, a dry atmosphere must be equally avoided. Muscats require a higher temperature and drier atmosphere than some varieties when setting, artificial impregnation being occasionally practised by fertilising every bunch with Black Hamburg pollen.

Late Grapes.—To do justice to late Vines they require a long season of growth, as to insure the Grapes keeping well they should be ripe by the middle of September. To effect this the Vines ought to be started at the end of the present month or early in March. Let the inside border be well supplied with water, and a supply of liquid manure will assist weakly Vines, but avoid making the soil sodden by needless applications. Remove loose surface soil from the border and supply fresh turfy loam with a little well decayed manure intermixed, sprinkling over each square yard 4 ozs. of approved fertiliser.

Late Houses of Black Hamburgs.—The Vines should be kept cool and the soil only moderately moist to preserve the roots in sound condition. It will be necessary to ventilate freely at and above 50°, and when that becomes the mean of the external air, or a little before, the Vines will break naturally. The Vines will set their crops by the early part of June, and the berries swell with sun heat, artificial heat only being required after the Grapes begin to colour.

THE KITCHEN GARDEN.

Broad Beans.—If extra early dishes are appreciated, a part of a warm border ought, where possible, to be devoted to the first crop. A moderately rich deeply cultivated soil suits this crop, and the seeds may be sown thinly in drills 2 inches deep and 2 feet apart. More seed may be sown in the open directly the ground is in a fit state, this crop forming a close succession to those in the warmer positions.

Peas.—Much that has been advanced concerning early Beans applies equally well to Peas. The extra early round-seeded varieties are the best to sow during the first fortnight in February, the wrinkled-seeded sorts frequently perishing if buried in cold wet soil. This important crop merits a good share of a south border, sowing the seed moderately thickly in wide drills 3 feet apart, or the rows may be disposed 10 feet or more asunder, the spaces between being cropped with Cauliflowers, Potatoes, or other early vegetables.

Peas for Planting Out.—The plan of sowing seeds in the open ground in November and nursing the plants through the winter has been superseded in favour of raising the requisite number of plants under glass, planting out when they are strong enough and the state of the weather permits. Extra early, if not particularly heavy crops are obtained in this way. For this purpose the early wrinkled-seeded varieties may be selected, and the seed may be sown either thickly in boxes, troughs, or 3-inch pots filled with fine soil, and placed in gentle heat to germinate, hardening before the plants are drawn, and planting out before the roots become badly matted together.

Peas in Frames.—If the required number of plants are raised in heat as advised, and turned out into pits or frames, a few early, if comparatively small, dishes may be the result. Brick pits or box frames are not indispensable, as it is possible to obtain equally as good crops in rough frames or pits with mats for protection. A mild bottom heat gives a good start to the Peas, and also to the rows of early Cabbage Lettuces planted midway between them.

Spinach.—Summer Spinach is usually associated with Peas, being grown in the spaces between the rows of the latter, the leaves reaching a suitable size for cooking before the Peas shade the ground. Sow the seed thinly in shallow drills midway between the rows of Peas each time sowings of these are made. Winter Spinach ought soon to commence growing strongly.

Potatoes.—It is yet early to commence Potato planting on a large scale, but exception may be made in favour of an early crop on a sunny border. Give the preference to short-topped, early maturing varieties, placing the sets about 9 inches apart in rows 20 inches or rather more asunder, in moderately rich, light, free-working soil. If the soil is at once ridged over the rows a good length of stem will be formed before the tops push through the soil. In any case a close look out should be kept for the latter occurrence, drawing soil up to and over the tops, or otherwise protecting them from frosts.

Garlic and Shallots.—Unless these are planted early their growing season is short. Rich, well-worked borders suit them. The divisions may be pressed into the soil, leaving the crowns showing through, disposing them 6 inches to 9 inches apart in rows 1 foot asunder. Underground Onions may be similarly treated. A little later Parsley plants, raised under glass, may be put out midway between the Garlic and Shallots, these not interfering with the progress and early maturation of these crops, and eventually occupying the whole of the ground.

THE BEE-KEEPER.

THE WEATHER.

OWING probably to the fact that the weather is an important factor in bee management, it is not surprising that bee-keepers are close observers of the various changes. At the time and place of writing a severe frost prevails; within the past twenty-four hours 22° of frost has been registered. The hives which are fully exposed are buried in snow, as are all the surroundings, to the depth of several inches. Many of the roads have been impassable owing to the snowdrifts, which are from 4 to 6 feet in depth. Although bad for travellers snow is an advantage in other respects, as it affords great protection to vegetation as well as to the bees in their hives. The cold spell of weather has been general throughout the country, but the snow only partially so, as a report to hand from a western county says, "Weather very severe, but little snow."

As long as the frost remains we allow the snow to remain on the hives, owing to the protection it gives to the inmates. But directly a change sets in it will be removed, as should there be any weak places in the roof the melted snow will soon find them out. After this takes place we shall probably have a few hours of bright sunshine, and it is then the hives will need attention, as with a rise of temperature the bees will be anxious for a flight after their confinement. We therefore repeat the advantage to be derived from shading the entrance. All that is required for this purpose is a piece of wood, tile, or slate placed in a slanting position across the front of the hive. It should be placed in such a manner that it obstructs the light but not the ventilation. The past two months have been a trying time for the bees, as January was showery and dull followed by extreme cold.

EXAMINATION OF COMBS.

There are many details in bee-keeping that lead on to successful bee management, which may be attended to at this season, when the bees require little attention. It is now a recognised fact that to be able to take due advantage of our short honey harvest spare combs are indispensable. To those who work largely for run or extracted honey it is their sheet anchor of success. We consider this point so valuable that we spare no trouble in keeping them in good condition. The system we adopt may bear repeating. After the honey harvest is over the combs are stored in a dry place; we prefer making a parcel of half a dozen, wrapping them in newspaper. They are then placed one on the top of the other in large packing cases. Before this takes place the box is loosely lined with some old shading material. This is well sprinkled with carbolic acid, which will have the effect of keeping out the wax moth, which is so disastrous to the combs. When the box is full similar material is placed over the top of the packages, the lid is closed, and treated thus a great number of combs may be kept in a small space.

It will be an advantage if combs stored in this manner are now examined. The paper coverings may be removed, and the combs brushed lightly to remove any debris. All should be removed from the boxes, or wherever they are stored. The material placed round the sides must be again sprinkled with carbolic, and the combs replaced in their former position. If this is done they will be ready for use, and be found in good condition when required. Such combs are also useful for the brood chamber, instead of using comb foundation when working for increase in the spring. It is not advisable to let the carbolic come in contact with the combs, and it is for this reason we wrap them in paper.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. Potts, Rainford, Lancashire.—*Hard and Soft-wooded Plants.*

Rivoire père et fils, Lyons.—*Seeds and Plants.*

N. Smith & Son, Adrian, Michigan, U.S.A.—*Spring Trade List.*

Vilmorin, Andrieux & Cie, Quai de la Megisserie, Paris.—*Chrysanthemums and Dahlias.*

E. Webb & Sons, Wordsley, Stourbridge.—*Farm Seeds.*



- All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Pruning Ceanothus Gloire de Versailles (*Inquirer*).—It should be somewhat closely pruned in the spring, as it produces the flowers terminally or on the young growths. The young wood usually suffers more or less from severe frost, therefore it is necessary to reserve some well ripened wood of different lengths. Do not spur in all the growths, though this may be done when the plants have covered the space, cutting out the weak and leaving the sturdy well ripened shoots, spurring to a few joints of the old wood, and thinning the resultant growths so as to prevent overcrowding.

Stem of Gros Guillaume Grape Shrivelling (*Idem*).—It is not unusual for the bunch stem of this "Grape to shrivel whilst the Grapes still keep good," the shrinking being due to a sort of shanking after the berries are coloured and finished. Such occurs in many other varieties of a gross nature, and is probably due to the soft nature of the stem, commonly called unripe. There is no trace, as a rule, of disease in such parts, though fungal growths sometimes develop therein in a damp atmosphere.

Soil for Malmaison Carnations (*Novice*).—The exact proportions of the various ingredients used to form a suitable compost for these popular flowers must vary according to the character of the loam. If this is of medium texture containing a fair amount of fibre, incorporate with three parts of it one part of leaf soil sifted through a half-inch sieve, one part manure from a spent Mushroom bed, also sifted, one part burnt refuse with plenty of sharp sand and a little soot added. Should the loam be heavy, an extra part of leaf soil and a little pounded charcoal ought to be added. If, on the other hand, the loam is very light, dispense with the burnt refuse and use little sand.

Dressing for Tomato Border (*E. F. C.*).—The large growers do not continually keep planting the same border year after year in their large houses devoted to Tomatoes, but either occasionally remove the soil and bring in fresh, or grow the plants in pots stood on the old border. This is the practice of perhaps the largest grower of Tomatoes for the London market, and on the whole more satisfactory, especially as regards early crops and diseases, than growing in borders. It pays to make new borders; but as you say this, in your case, is quite out of the question, you may give the border a dressing of basic slag, 1 lb. per square yard and $\frac{1}{2}$ lb. of kainit, digging the dressing in with a fork, taking small spits, and working 10 to 12 inches in depth. If this were done now the conditions would be favourable for planting the Tomatoes after the bedding plants are cleared out. Then, before planting the Tomatoes, supply a dressing of mineral superphosphate, 34 per cent. soluble phosphate, three parts, and sulphate of ammonia one part, mixed, using 3 ozs. of the mixture per square yard, and mixing with the soil to a depth of 4 to 6 inches. If more vigour be required afterwards, the plants may be watered occasionally with nitrate of soda, not more than $\frac{1}{2}$ oz. to a gallon of water, and having it prepared some little time before use. It will hardly be required before the first trusses of fruit are set and advanced in swelling. Possibly the border would be all the better for top-dressing, after the plants are put out, with a little sweetened manure, not using more than about an inch in thickness. Of course, new loam on the top of the present border would be beneficial. One row of Tomatoes along the front of the house and

grown up under the roof would not generally give such good results as four well fruited rows about 3 feet apart. Still, when Mr. Doe of Knowsley had charge of the gardens at Rufford he had a crop from plants trained up the roof of a house that would have been difficult to excel by plants growing across the border. The roof plants were grown in a trough made of 11-inch deals arranged along the front. In one instance we knew of splendid crops of Tomatoes produced by plants in merchant's egg boxes which are only about 6 inches deep; but top-dressings of rich turfy soil were piled above the tops of the boxes and netted with a mass of roots, and judicious feeding was resorted to. The boxes were used because plants in the border were devoured by eelworms; those in the boxes were free. One grower is successful with one particular method, another grower with a different practice. We should imagine that any of the methods indicated would be better than planting in a border that had afforded standage for bedding plants through the winter.

Bulbs not Thriving (*P. Q. R.*).—The end of December is late for potting bulbs, many of which are much shrivelled at that time, and fail to grow. We should not have pressed the bulb into the soil "firmly," but should have made a cavity, resting each rather lightly than otherwise, on a very sandy base. With the soil moderately moist at the time, but not decidedly wet, and the pots plunged in and covered with damp ashes, we should expect that roots would form if the bulbs were not exhausted. They would not form and take possession of dry soil, while, if the ashes were dry also, these would absorb moisture from them instead of, what is needed, imparting it to them. If the soil in the pots is very dry, give water at once, and if it does not enter freely, stand the pots half their depth in water, leaving them there for an hour, or until the moisture rises through to the surface, then plunge them to the rims in damp ashes and invert some small flower pots over the crowns. If they do not grow under that treatment they will not grow at all. If you can maintain regular moisture in the soil without plunging, that will answer equally well; but very few amateurs can accomplish this, and the plunging system is the safest and best.

Point Judging (*S. E. H.*).—When there are a great number of items in a class, as is of necessity the case in judging gardens and allotments, there is no method comparable to that of determining the value of each article and recording it in points or marks. The same system is necessary in close competitions with blooms of Chrysanthemums, Roses, and other flowers, also for dessert tables, as well as collections of vegetables and fruit. It is based on the fixture of a maximum value for each item, and from that working downwards as may be necessary, and entering the value of the several items examined. For instance, if 8 marks are agreed upon as a maximum for a crop of Onions, or anything else, and the judges should only consider the crop half good they would give it 4 marks, if $\frac{3}{4}$ good 6 marks, if $\frac{1}{2}$ good 2 marks, or set down anything between those figures as more clearly representing actual merit. Maximum marks vary according to the value or difficulty in producing the products to which they are attached. If you send 3d. in stamps to the publisher, and ask him to send you the *Journal of Horticulture* of August 31st, 1899, you will see a record of marks allowed for the several items in the great dinner-table class at Shrewsbury, also those actually awarded by the judges. A mistake very liable to be made by adjudicators who have had little or no experience in this method of judging is to commence pointing too high. They might easily give the full allowable number of marks to the first Onion bed examined, and then in the next garden find a better. They are then apt to feel rather sheepish, and certainly not like the cautious judges they ought to be. Maximum marks are only justifiable by products regarded as *unsurpassable*, and these are few in these days of high competitive cultivation.

Canadian Wonder Beans Diseased (*Subscriber*).—The plants have been carefully examined and found to be infested by a parasitic fungus, which produces in the root-stem what is known to cultivators as "rust" or "canker," and the effect on the leaves and pods is called "leaf-spot" or "pod-spot," just as the parts respectively are infected. It has also received the name of anthracnose, while the organism itself has been called *Colletotrichum lagenarium* by some authorities, and by others *Glaeosporium Lindemuthianum*. The disease is seldom destructive, except during seasons of cold rainy weather, though very common in several European countries, and has been found over a large portion of the United States. The parasite thrives, as before stated, in cold rainy weather, and under glass when the plants are kept too wet at the roots in a low temperature, and the atmosphere saturated. You are right—a chill, such as watering in cold weather—would help the fungus and induce that condition favourable to its development. When the plants are kept in a rather high temperature and somewhat dry atmosphere, water being given sparingly at the roots, the disease makes little headway. Planting in a light soil, on high, well-drained land, is one of the best preventives outdoors, and these conditions apply equally to plants under glass—namely, a temperature of 60° to 65° at night, and 70° to 75° by day with sun heat. Lose no opportunity to admit air, exposing the plants to all the light possible, and be careful not to have the soil very wet. As the disease goes over in part with the seeds, it is well to examine them before sowing and reject all that show evidence of the malady. From some experiments we have made good results attend soaking the Beans before sowing in a solution of blue vitriol, 1 part in 12½ parts water, for ten minutes.

Raising Tomato Plants for Houses and Outdoors (Beginner).—The plants may be raised readily in frames over hotbeds, the seeds being sown in pots, pans, or boxes, commonly called propagating trays, being 15 inches long, 9 inches wide, and 2 inches deep. The proposed roughly constructed pit will answer for the plants after potting just as well as the most costly structure, and it need only be so high at the sides as to allow of a flap a board wide, for ventilation, about 18 inches from the ground, so that the sides need not be more than 2 feet 6 inches high, or even less. The roof should be span, so that the plants may have light from all sides, it not being possible to have them too sturdy, and they get more light in a span, and are nearer the glass than in a lean-to. Besides, the back of a lean-to will require to be a considerable height to allow for head room. A structure about 12 feet wide, 2 to 2 feet 6 inches high at the sides, and with 7 feet 6 inch roof-lights, and ventilators along the ridge, would be suitable. It should have a flow and return 4-inch hot-water pipe on each side, and include provision for plenty of air, as there is little chance of good results without securing sturdy plants. The house so constructed would always be useful, and cost very little more than the makeshift; indeed, the proposed one is inadequate to the requirements. No unheated structure would answer for Tomatoes by the 1st of April, and paraffin stoves are out of the question, as the structure must be such as to bring the plants on, even for planting outdoors, otherwise good results cannot be looked for. The raising of the plants is a very important matter, they being thinly grown from the start. The cheapest effective covering is scrim canvas, but even this is of no use without hot-water pipes, for frosts are sometimes very severe in April. The end of March is a good time for sowing to raise plants for outdoor planting, but it is necessary that they be grown well, hard, strong, and showing the trusses of bloom when planted out in May, or as soon as safe.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. C.).—1, *Lindleyanum mirandum* (Odontoglossum mirandum of Reichenbach); 2, *Dendrobium luteolum*. (A. L.).—1, *Dendrobium primulinum*; 2, *Vanda gigantea*; 3, *V. Amesiana*; 4, a pretty white form of *Laelia anceps*; it is of no value in its present state, but might develop into an excellent variety under the best cultivation. (H. J. T.).—1, *Adiantum pubescens*; 2, *Phoenix dactylifera*; 3, *Selaginella caesia*; 4, *Iris tuberosa*, the Snake's-head Iris. (C. R.).—1, *Cypripedium Spicerianum*; 2, *C. insigne*; 3, *Dendrobium Wardianum*; 4, *Adiantum formosum*; 5, *A. Pacotti*; 6, *Scolopendrium vulgare cristatum*. (D. S.).—1, A poor form of *Odontoglossum crispum*; 2, *Cypripedium insigne*.

COVENT GARDEN MARKET.—FEBRUARY 21ST.

AVERAGE WHOLESALE PRICES.—FRUIT.

Supply of Grapes much shorter.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Melons	0 6	to 1 6
„ Californian	7 6	10 0	Oranges, per case	5 0	15 0
„ Canadian, barrel	10 0	15 0	„ Tangierine, box...	0 6	1 9
„ Nova Scotian, barrel	10 0	17 0	„ Californian, seed-		
Cobnuts per 100 lb....	60 0	70 0	less	16 0	24 0
Grapes, black	2 6	5 0	Pears, Californian, case...	6 0	9 0
„ Muscat...	4 0	8 0	Pines, St. Michael's, each	1 0	6 0
Lemons, case	4 0	15 0			

AVERAGE WHOLESALE PRICES.—VEGETABLES.

Vegetable supply very short.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz.	2 6	to 3 0	Mushrooms, lb....	1 0	to 1 3
Asparagus, green, bundle	5 0	5 9	Mustard and Cress, punnet	0 2	0 0
„ giant, bundle	15 0	20 0	Onions, bag, about 1 cwt.	4 0	8 0
Beans, Jersey, per lb..	2 0	2 6	Parsley, doz. bunches	2 0	4 0
„ Madeira, basket	2 0	2 6	Potatoes, cwt.	3 6	6 0
Beet, Red, doz....	0 6	0 0	„ Teneriffe, cwt....	18 0	28 0
Brussels Sprouts, ½ sieve...	3 0	3 6	Radishes, French, round		
Cabbages, per tally	9 0	12 0	per doz....	1 6	0 0
Carrots, per doz.	5 0	7 0	„ Jersey, long		
Cauliflowers, doz.	2 0	3 0	per doz....	0 8	0 10
Celery, per bundle	1 0	1 9	Seakale, doz. baskets	12 0	15 0
Cucumbers, doz.	4 0	8 0	Shallots, lb.	0 3	0 0
Endive, doz.	1 6	2 0	Spinach, per bushel...	3 0	5 0
Herbs, bunch	0 2	0 0	Sprue, French, per doz.	7 0	9 0
Leeks, bunch	0 3	0 0	Tomatoes, per doz. lbs.	6 0	8 0
Lettuce, doz.	1 6	1 8	Turnips, bunch...	4 0	6 6

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Maidenhair Fern, doz. bnch	8 0	to 10 0
Arums	6 0	8 0	Marguerites, doz. bnchs.	3 0	4 0
Asparagus, Fern, bunch...	2 0	2 6	„ Yellow, doz. bnchs.	4 0	6 0
Bouvardia, bunch	0 6	0 9	Mimosa, per bunch	1 6	2 0
Carnations, 12 blooms	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Cattleyas, per doz.	12 0	24 0	Narcissus, white, doz. bun.	2 0	3 0
Christmas Roses, doz.	1 0	2 0	„ Yellow, doz. bunches	3 0	5 0
Chrysanthemums, white			„ double, doz. bunches	2 0	4 0
doz. blooms	6 0	9 0	Odontoglossums	5 0	7 6
„ yellow doz. blooms	5 0	8 0	Pelargoniums, doz. bnchs	8 0	12 0
„ bunches, var., each	1 6	3 0	Poinsettias, doz.	12 0	18 0
Daffodils, double, doz. bnch	8 0	10 0	Roses (indoor), doz....	6 0	8 0
„ single, doz. bnch.	6 0	12 0	„ Red, doz.	6 0	8 0
Eucharis, doz.	8 0	10 0	„ Safrano, packet	3 6	4 0
Gardenias, doz.	6 0	8 0	„ Tea, white, doz.	3 6	6 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	5 0	7 6
bnchs.	6 0	9 0	„ Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz.	6 0	8 0	Smilax, bunch	5 0	7 6
Lilium Harrisii, 12 blooms	6 0	8 0	Tulips, scarlet, bunch.....	0 6	0 8
„ lancifolium album	3 6	4 6	„ yellow, bunch	1 0	1 6
„ rubrum	3 6	4 6	„ bronze, bunch	1 0	1 6
„ longiflorum, 12 blooms	8 0	10 0	Violets, Parma, bunch	4 0	6 0
Lilac, white, bundle	4 0	6 0	„ dark, French, doz.	2 0	3 0
„ mauve, bundle	4 0	8 0	„ „ English, doz.	2 0	3 0
Lily of the Valley, 12 bun.	9 0	18 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz.	6 0	to 36 0	Ferns, small, 100	4 0	to 8 0
Arums, per doz.	18 0	24 0	Ficus elastica, each	1 6	7 6
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen	15 0	20 0	Lily of Valley, per pot	1 0	2 0
Chrysanthemums, each	1 0	4 0	Hyacinths, Dutch, doz.	10 0	18 0
Crotons, doz.	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz.	8 0	12 0	Lycopodiums, doz.	3 0	6 0
Daffodils, pot	1 0	1 6	Marguerite Daisy, doz.	12 0	15 0
Dracæna, var., doz....	12 0	30 0	Mignonette, doz.	8 0	12 0
Dracæna viridis, doz.	9 0	18 0	Myrtles, doz.	6 0	9 0
Erica various, doz.	30 0	60 0	Palms, in var., each	1 0	15 0
Euonymus, var., doz.	6 0	18 0	„ specimens	21 0	63 0
Evergreens, var., doz.	4 0	18 0	Poinsettias, per doz.	15 0	20 0
Ferns, var., doz.	4 0	18 0	Solanums per doz.	9 0	18 0



SPRING CLEANING FOR THE YOUNG.

WE are in terrible fear—not of our Editor, oh, no, nor of our general readers—they would smile and say nothing. But what of the ladies of the family? Do they ever read “Home Farm?” Not unless there is something that appeals to them. We hope they will not see this number, at least those of them who have reached maturity. They might scoff, at any rate they would sneer, “What has a mere man to say about cleaning that we do not know far better than he?” Oh, yes, we quite agree, humbly assuring them that we would never enter into argument with them, but we are thinking now of the young folk, those who will occupy our places in a few years and do things better than we have done them. But the young are forgetful; their minds, perhaps, are not altogether “on pleasure bent,” but they are apt to slip little minutiae, thinking that such trivial matters are of no moment.

We are not speaking of house cleaning, that is not our province, but of the dairy and the utensils appertaining thereto we would write. Just now in the generality of farm houses dairy work is slack and has been during the winter months, but every day now cows will be falling due to calve, and will greatly be on the increase. Some dairies are light and airy and not too big, still during the short and cold days it is quite possible that the daily cleaning may have been a bit slipped. It is not pleasant to be rubbing and scrubbing stone shelves and cemented floors in a low temperature and by the aid of candle or lamp—in fact it is impossible with artificial light, or even the best light afforded by a December day, to rout out all the corners or crannies. For one thing the water, however hot, cools so quickly, and for dairy work hot water is an essential. Happy is that dairymaid who has a nice cemented floor and slate or stone shelves; her diffi-

culties are nil compared to her neighbour who may have a badly laid brick floor and old wooden (and possibly worm-eaten shelves). Oh, yes, dairies of that sort still exist, and there are others that in a wet time flood. The tenant has not the means and the landlord not the will to alter this state of affairs.

We read in books how delicious is the sweet smell of fresh milk. So it may be, but a dairy wants to be perfectly odourless. This can be done if the presiding genius is of modern culture and fully alive to her responsibilities. There is an earnest desire now on the part of those who have taken up dairy work to aim at the highest degree of perfection, and perfection without cleanliness is unattainable. We do not speak of dairies with tiled walls, where no atom of dirt can lodge, but just of simple homely places that owe their whiteness to lime. Nothing beats lime, but lime accumulates, and though a woman would never hesitate about dispapering a room before the new one is hung, yet it may never occur to her that the walls would be better for a good scraping and washing. Those walls—we speak from our own knowledge—are by no means even. There is many a rough ledge or cranny where the lime has lodged year after year. A garden hoe does not make a bad scraper, and a rough besom and hot water will prepare a nice wholesome surface for the new wash. There may be painting of doors or woodwork round the windows. Best do it now and get off the smell of paint before the milk pans are all full.

There is one little item has often struck us. The window may be, and probably is, covered with wire or perforated zinc. Is that ever moved, year in, year out, to give the window a chance of a thorough cleansing? We have seen windows and wire that have stood untouched for many a long season. This is only a small matter, but bacilli lurk everywhere. The light we know is bad for them, but the zinc is not very transparent. Surely in no dairy worth naming is a drain opening. We have read of such things, we have heard of such things, but only, we hope, in fiction. All superfluous moisture should be taken up with floor flannels; if the ventilation is good Nature soon makes all dry. It is a mistaken idea a damp dairy.

Now as to utensils; what of them? The separator has had a winter's rest. Has its abode been dry, or is there in any part an atom of rust? What about the various workings? Remember the time is at hand when it will be needed to deal with large quantities of milk twice daily. Just look it over carefully, and thus guard against a breakdown at an inconvenient moment. What of the larger churn, the one for summer use? Has it ever been looked to since the autumn? Remember wood is apt to get "fusty." Take it out into the fresh air, and give it a thorough hot scrubbing. Perhaps, too, there may be a trifling repair needed. As to the pails, we suppose they are shining like silver, and hung up out of the way. How beautiful the old wooden ones were when fresh scoured, with the steel bands burnished to a radiancy. They were heavy and perhaps clumsy, but certainly more picturesque than the tin ones, and we fancy sweeter and cleaner.

All wooden utensils should be seen to—bowls, butter workers, Scotch hauls. If they have been kept dry all the winter there will be shrinkage, and they are all the better for a good soaking and overhauling. We do not like cream panchions or milk bowls that are a bit chipped or cracked; they are not good to clean, and will soon breed nastiness. The housewife is always glad of an extra bowl or panchion, and it is economy to get new whole articles. Most farms possess a wooden rack for panchions and pails to "sweeten" in during the day. It may need a coat of paint or be loose in a joint.

Butter cloths have happily gone out of favour. We never did like them; we could always fancy they had a "flavour." The parchment paper which has taken their place is both cheap and excellent. But the paper does not answer for cheese binding and making, and during the long winter evenings young hands might find excellent employment in hemming new cloths, so that there should be no lack when the busy time came. Unhemmed cloths do not look workmanlike; raw edges are always untidy. This is a small matter, but one worth mentioning. Where cheese is

made spring cleaning is even a more serious business—there are so many vessels to see to and storage rooms to purify.

Need we again say that the dairy should be a temple devoted only to the keeping and safeguarding of milk and milk products? It is cool and tempting—such a thorough draught that meat would hang indefinitely, and other comestibles preserve their virtues for long; but the housewife must be inexorable. She never knows how easily a taint may come. It is in her power to keep clear, and it must be a case of milk or nothing. She might as well give up her work as to allow of any profanation of her temple.

We hope we have offended no one, that is far from our intention; we only want to save our fair workers difficulty and disappointment for the future. We wish their butter and cheese to "top" the market, and to fill their pockets with shining gold pieces.

WORK ON THE HOME FARM.

Frost and snow! Heavy snowfall and keen frosts, registering as low as 7° Fahr., or 25° of frost. And this in mid-February! In some seasons we might have rejoiced in such a visitation, for with plenty of stored roots the stock breeder and feeder could ignore such weather, or rather rejoice that his arable land, whether for spring corn or Turnips, was getting such a preparation for seedtime as he could not give it. But now! Turnips and Swedes are all finished, and the scanty supply of Mangold all that is left to assist the straw and hay to keep sheep and cattle alive until the grass begins to grow.

No work on the land has been done since last week. Muck leading is the only available work, and that will soon be finished for the present. Employment may be found for a few days in carting bricks for building repairs and pipes for draining, then the horses must rest if the frost lasts. A rest will do them no harm, but they must be judiciously fed; after the first day the corn allowance must be reduced at least one half, and the linseed porridge tub must not be neglected. Work may be found for the men in whitewashing the stables and cowhouses; a good limewash never hurts anything, and if a small quantity of phenyle be mixed with it its disinfecting properties will be improved. Straw is now so plentiful and cheap that the use of peat moss litter may be neglected, to the detriment of the farmer. Having thoroughly tried the litter we are convinced that, although straw may be, and is, far preferable as bedding for the comfort of the animal, there are great manurial advantages in the use of peat moss. A 3-inch layer on the floor of every box and shed will absorb a large quantity of valuable ammonia, which would otherwise be lost.

Basic slag may now be bought, and would be better on the land than in the shed, but if it can be procured and placed upon the premises a job may be found for the horses. Kainit also might be got, and would be more useful if applied at once. The sowing of these manures is not pleasant work in wintry weather, but work must be done some time, and a great deal of it is unpleasant at any time. Sheep are doing well on short commons, and lambs are healthy, but the cake bill will be a heavy one. Will they pay for it?

SCARCITY OF FARM LABOUR IN THE STATES.—Reports from the West and South state that there is a lack of labour in the farming districts. The farmers always complain about this time of the year of scarcity of hands, but in previous years it has not been as serious as it is now. Not only are more men needed than usual because of the excellence of all the crops, but it is impossible to obtain the average number of labourers. The present condition has been brought about principally by the large orders received by factories and mills in what is ordinarily their dull season, and the ability of labourers to find work at home without wandering away in search of it. The farmers are offering double the wages usually given, and this is attracting men from poorer positions.—("Yorkshire Post.")

CALF MEALS.—After extended trials among farmers in various districts and unknown to each other, we are able to announce a consensus of opinion in favour of the following calf meal or milk substitute:—

Finely ground linseed ...	...	...	...	...	...	8 lbs.
Barley meal ...	...	...	...	...	...	13 lb.
Wheat meal ...	...	...	...	...	...	14 lbs.
Carbonate of soda ...	...	...	...	...	...	3 ozs.

This should be mixed with a little cold water, so as to make it of a thick creamy consistence, and the boiling water added, stirred for a few minutes, and given when new-milk warm. By finely ground linseed is meant the fine linseedmeal formerly sold for poulticing, but since superseded by crushed seeds which contain the oil. We do not want the oil in this case, as young calves cannot emulsify it in the stomach and intestines, and failing to do that it would cause scouring. Wheatmeal, of course, means whole wheat, not flour. This mixture answers well without the carbonate of soda, but with it there are fewer reports of scouring, and we give the soda the credit of preventing that acidity which is often the forerunner of skit. Where the distressful malady persistently recurs (and it does on some lands) the amount of soda may be doubled for a while.—("Farmer and Stock Breeder.")

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Barr's Golden Wax-Pod Dwarf Butter Bean; the fleshy pale yellow pods run to Sin. long, are stringless, and of delicate flavour; it is a marvellous cropper and very early. Per pint, 1/9; per quart, 3/6.

Barr's Lightning Runner Bean, a remarkably prolific Runner, and the earliest of all, bearing numerous heavy clusters of long fleshy pods of a fine delicate flavour; a valuable acquisition. Per quart, 2/6.

Barr's Covent Garden Beet, dark crimson flesh, fine flavour, medium size. Per packet 6d.; per oz., 1/3.

Barr's Hardy Winter White Broccoli, a magnificent Broccoli; should be sown from end of March to May for a succession. Per packet, 1/-; per oz., 2/6.

Barr's Little Queen Cabbage, of delicate flavour; highly recommended. Per packet, 6d.; per oz., 1/6.

Barr's New Intermediate Carrot, superior medium long Carrot, of a rich red colour and fine cooking properties. Per packet, 4d.; per oz., 10d.

Barr's Champion Solid White Celery, solid and sweet, remaining long in condition. Per packet, 1/- and 2/6.

Barr's Paragon Cabbage Lettuce, light green, leaves smooth and succulent, medium size, all heart, sweet and tender. Per packet, 1/-; per oz., 2/6.

Barr's Scarlet Perfection Radish, an extra-fine, very early, short-topped, turnip-shaped Radish; colour, rich scarlet; flesh white, mild, and crisp. Per oz., 8d.

Barr's Early Ruby Tomato, solid, deep-red fruit of fine form and medium size, abundant cropper and very early. Per packet, 1/-.

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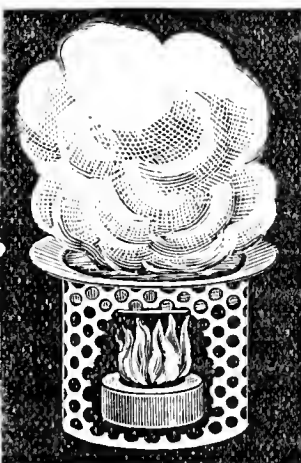
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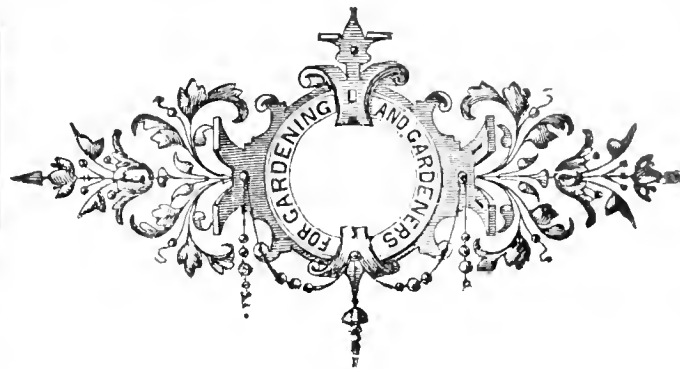
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MANAGEMENT.

EARLY training, whether acquired from others or elaborated by oneself, exerts an influence beyond expression on one's future. The man who is started on correct lines at the beginning of his career, and who continues to train himself—to educate himself—possesses a reserve force equal to meeting most emergencies, and gives him a power in the discharge of ordinary duties that renders them light and pleasant. The practice of thinking out methods for oneself is one to which all young men ought to accustom themselves; I mean not to accept lessons in routine, no matter of what nature—digging, pruning, or training—without digesting the matter in their own minds, and the outcome will be not only a more intelligent grasp of the particular practice, but almost certainly some original modification of it to suit circumstances when they arise. We all know people who have so nicely adjusted themselves to grooves that the addition of some extra work, without a corresponding contribution of labour force, causes a complete dislocation of arrangements. The reduction of their working force acts in exactly the same manner. There are others who have acquired an elasticity in managing both men and work who are unaffected with such changes, and who cause one to wonder how so much "ground" can be got over so successfully. The one is certain to be a man who thinks for himself; the other acts on the thoughts of other people and possesses no power of initiative.

There are some points of management that one and all must follow to be successful. The accomplishment of routine work at the proper time is one instance of which systematic hoeing may be taken as affording a happy illustration. The result of this practice is the absence of any except seedling weeds of the smallest dimensions. No time is lost in the performance of the work which always occurs when weeds have gained strength. The work is of better quality, for, carried out with care, scarcely any weeds will be left to grow, which cannot be said to follow hoeing when weeds are strong. The labour thus saved is time gained to overtake other work, and finally its effect is cumulative, because all garden labour performed at the

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proper time is quicker of accomplishment than if postponed. It is quite a common custom to leave certain work, such for example as Box trimming, to the second or third year in order to save labour. As a matter of fact the practice is followed by an increase of labour. A properly kept edging demanding annually little attention in comparison with that which has gone wild for two years.

In no part of outdoor gardening is the value of system more apparent than in the care of flowers in borders or in beds. It is very generally thought that the only method possible to pursue in order to furnish borders to overflowing, and to allow the plants to fill every inch of space, is to leave them to themselves. To do so is, however, to court defeat, and to increase labour afterwards trying to put matters right. I have followed a systematic method of examining all outdoor arrangements at short intervals, with the result that the end in view has been secured with an expenditure of the minimum of labour, and the flowers themselves to ordinary appearances exhibit no signs of having been touched. When allowed to grow practically wild it becomes, long before the end of the season, a struggle for existence with the plants, and no end of work, unsatisfactory at the best, to render things less chaotic. My first lesson as to the value of oft repeated attention to flowers was derived from a clever suburban gardener, who at the time when carpet bedding was at the zenith of popularity produced perfect examples of that style. I remarked to him on the labour involved in keeping in such perfect order so many beds and borders as he had in his care, and he assured me that he himself overtook all the labour, which was confined to two hours weekly on one morning before breakfast.

One of my cares is to impress on young men the immense amount of labour they would save themselves by sponging or otherwise cleansing plants which are subject to insect infection, but few of them spontaneously attend to this necessary work, but must be specially instructed to do it.

The above are instances illustrative of methods at once rapid in execution, and resulting in the best effects. There are, however, other routine practices which may be too quickly done to yield ultimate satisfaction. A common case is that of digging—one of the ordinary operations of gardening that is becoming a lost art. With scarcely an exception, young men in carrying out this important work insert the spade at an angle, turn the soil upside down, and then proceed to do the same with the next spadeful. I admit that this method permits a garden to be got over in a shorter space of time than by the older way of inserting the tool as nearly as possible perpendicularly, and finishing the operation by smashing any clods in the furrow. The latter method, however, repays itself by a deeper soil, better cultivated, less affected by weather, and certainly more fertile—the very reason for the operation.

One of the greatest aids to the smooth running of a garden is the capacity to determine the most suitable time for performing work; and on the other hand, when it is possible to diverge from cut-and-dry practices. Sowing and planting at the times best suited for particular crops are most important, and much time may be lost in rectifying mistakes of this nature. Such, for example, as sowing winter crops so early as to require an intermediate transplanting; or in the case of flowers, such as Asters, Marigolds or Stocks, making a mistake of the same nature, with consequent pricking-out and attention, that sowing at a later date would have rendered unnecessary.

In the same way one may often diverge considerably from the beaten track if ultimately the result shall work out equally well. In this way shrubberies, hedges, and edgings may often be managed successfully by working them up at odd times when other work cannot be carried out. Even that all-important operation, the planting of the summer flower garden, an incubus to many hard-working men, loses much of its terror if, instead of attacking it with all forces till it is overcome, we take it in detail and as plants are ready, the harder first; we select suitable opportunities, a day, or even half a day, at a time, extending over several weeks, till all are in place. This method, while it lessens—nay, dissipates—worry, allows us to carry forward other necessary work as well, without causing neglect to the flowers.

Perhaps, however, the greatest source of waste, or, on the other hand, of working force, is the management of workmen. Scarcely any workman possesses adaptability, or, in popular parlance, sees an inch before his nose. Hence arises the necessity of the head to be constantly watchful that the proper men are detailed to particular jobs, that rapid or perfect methods are adopted, and suitable numbers to carry out an operation are selected. Jethro Tull's opinion that all workmen were rogues at labour is incorrect. Generally they take a pleasure in work if it is interesting, and to most men it is possible to impart a feeling of interest by getting him to think he is occupied in an important operation, and that you expect him to carry it out well and effectively.—B.

BUD-DROPPING IN PEACHES.

In some seasons there is much trouble given by the wholesale dropping of the buds of Peach and Nectarine trees at the time when the sap becomes active and the consequent swelling of the bud commences. This, of course, varies with the forced and natural growth of the trees, but bud-dropping is sometimes known in each case. Last summer and autumn was of such a tropical nature that there was often a shortness of water, and the trees suffered from the restricted supply, as it was impossible to give the usual periodical soakings. This was so in my case, and I should not have been surprised had bud-casting become a prominent failing this year, when on the verge of starting into bud-growth. It is therefore gratifying to find that such anticipations are not being realised, for both early, mid-season, and late trees showed little tendency to do this, or, at any rate, not more than happens in ordinary seasons.

The season was remarkable for the extent of drought and its effect on vegetation generally, and Peach trees, both indoors and on open walls, suffered more or less in accordance with the facilities afforded the garden in its water supply. There were cases where almost every drop used had to be carted from some distant spring, and to expect that a large extent of fruit houses and outdoor trees could be given their usual supply would be as unreasonable as it would be impossible, when so many other demands are made on the supply available. Some seasons when there is a continued spell of tropical summer weather the earlier trees become what is termed over-matured, and this has been set down as a cause for the premature fall of the buds in the early spring.

Such experiences and results tend to overthrow the views one is inclined to take up, and explode little theories that gather in the mind. There must be reasons for such erratic actions on the part of trees, but to the average gardener they are not easy of solution. In my own case I felt certain that trouble was in store from the knowledge of the fact that a diminished water supply at a critical time is ordinarily the precursor of bud-dropping in due season. There were in last year all the needful attributes for bringing about this undesired failing, which make one ask the question why is it not so? There must have been something sustaining them. In older trees the roots penetrating deeply into the border would be some help; but what of the spider-infested foliage? These destroyers of healthy leafage were much in evidence last summer, and were with much difficulty held in check, and too often the early fall of the leaf was an inevitable result of their presence.

Herein was found another reason for expected trouble, which, happily, has not been realised; and why? Is it because their principal functions were complete early, or did the late autumn watering make good their earlier deficiencies even without leaves. The case gives rise to deeper thought the more one dwells upon it, but it might prove a fatal mistake to rely on the experience gained and to relax one's efforts in future seasons by reason of favourable results gained in the face of such unintelligible elements. It would be interesting if other readers gave their experience bearing on the prospects of the buds following such a trying season as that of 1899, when there was a dearth of water and a wealth of red spider.—W. S.



ONCIDIUM CRISPUM GRANDIFLORUM.

YES; "R. J. H.," there is an *Oncidium crispum grandiflorum*, and your supposition that it should be *Odontoglossum crispum grandiflorum* is an erroneous one. This *Oncidium* was placed before the Royal Horticultural Society upwards of ten years ago, when it was awarded a first-class certificate by the Orchid Committee. The flowers (fig. 44) were of great size, over 3 inches in diameter; the sepals and petals deep brown, with some yellow markings, the base of the lip having a broad rich yellow band. It was exhibited by Mr. J. Charlesworth, of Heaton, Yorks.

ONCIDIUM SPILOPTERUM.

THIS species is well worth growing on account of its very bright and showy appearance when in flower, the fine chrome yellow tint of the segments being unsurpassed in the genus. Anyone having an intermediate house a little warmer than where the coolest section of *Odontoglossums* thrive will be able to grow it to perfection, and a suitable compost will be found in equal parts peat and moss, with a few pieces of broken charcoal and crocks. The pots must be of medium size only, and water in small quantities only is required. A native of large tracts of country in South America, it naturally varies a good deal, but all the forms are effective.

CATTLEYA SCHRÖDERÆ.

To many people the idea that one form of *C. labiata* is better than another seems absurd, but for beauty I am doubtful if there is one to beat *C. Schröderæ*. Its charm lies in the beautifully crisped petals and lip, and in that delicate heliotrope-like odour always noticed in a house wherein it may be flowering. There are several varieties of it, one especially pretty form having pale mauve sepals and petals, with a rather deeper lip covered partly with a deep orange yellow blotch. There is also a white form, but it is not the best of the albinos by any means, as it lacks that snowy whiteness so characteristic of some of the others, such as *C. Mossiæ Wagneri*.

For cultural purposes group it with *C. Trianae*, of which some authorities make it a variety, and allow it a light airy position with the Brazilian species generally. During the early months of the

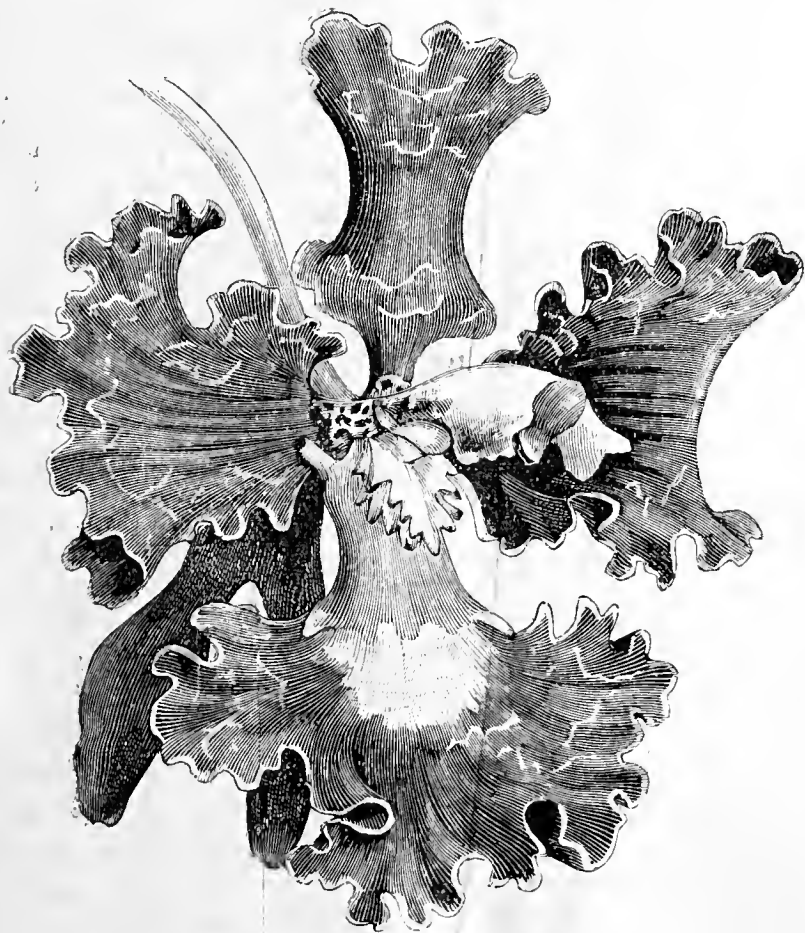


FIG. 44.—ONCIDIUM CRISPUM GRANDIFLORUM.

year it is quite possible to overwater this species, and a frequent mistake made in its culture is overdrying the roots in winter. It likes a good supply of water when growth and roots are both active, and a

little extra warmth in early spring is advisable. For compost use the ordinary peat and moss mixture, giving good drainage and pots of medium size.

TRICHOCENTRUM ALBO-PURPUREUM.

Though not a showy Orchid, this is very interesting and pretty, and a few plants may be grown where a variety is liked. The flowers (fig. 45) are small, have brownish and green sepals and a white lip with a purple spot on each side of the crest. A native of Brazil, it should be allowed a fair amount of heat and moisture; but the plant is too small for growing in large pots, and the most likely plan to



FIG. 45.—TRICHOCENTRUM ALBO-PURPUREUM.

succeed with it is placing the plants upon soft blocks of Tree Fern stem with a little moss about their roots, though some growers succeed with it in pans. A fair amount of moisture all the year round is better than very widely divergent treatment summer and winter.

CYMBIDIUM DEVONIANUM.

A well-flowered plant of this species with its pendulous spikes of blossom, each one a study in browns, is very interesting and pretty, but, unfortunately, it is much too rarely seen. I noted a fine specimen with ten spikes during the week, and though flowering earlier than usual was none the less welcome. Its best position is suspended in a basket near the roof, and though many cultivators still keep it in a hothouse the specimen above referred to was grown in a cool temperature. Ample moisture and a substantial compost are needed.

LÆLIA JONGHEANA.

This being the season when the flowers of this *Lælia* may be expected those having plants from the recent importation will have an interesting flower to look forward to, and, unlike most kinds, one which the majority of growers have not seen. It will never probably gain any very important place, but it will be useful for hybridising, and possibly good forms of it may turn up. Although so rare before the discovery lately, it is interesting to note that it has been known for just upon half a century, having been discovered in 1854. Then it was probably lost sight of for a number of years.—H. R. R.



SPRING POTTING.

RENEWED interest appears to spring up in the mind of the cultivator when several healthy rooted cuttings are ready for their first potting. It may be that the cuttings were inserted singly in small pots, which they have now filled with pushing rootlets that are seeking fresh feeding ground; and if they should remain long in these pots the growth will be weaker than is desirable, hence these small plants require attention first. Rooting cuttings round the edges of 3-inch pots is a common and ready method of securing a good stock, as the cuttings often root more freely in this position than they do in the centre of a mass of soil in smaller pots. Both methods are good, and with care successful rooting follows, and little check is given in the potting. Numbers of cuttings are also rooted in shallow boxes and beds. All, however, should be placed in pots when sufficiently rooted, and before the roots mat themselves together or the top growth elongates.

As a rule the best size of pot for the first potting is a 3-inch. That the receptacles should be clean and dry is essential. The crocks employed as drainage material must also be in the same condition. The compost ought to be previously prepared, and in the condition of being neither wet nor dry. Well decayed fibrous loam, carefully pulled into small pieces with the hand, should form the base of the compost. Two parts of loam to one of leaf soil will form a suitable compost, adding a moderate proportion of sharp sand. If the loam be of a heavy character, the addition of crushed charcoal will tend to insure its porosity. A very rich and elaborate soil is not necessary at first. It is more desirable that the growth should be stocky and short jointed, even if it is longer in being produced, than to be run up quickly.

Arrange the drainage in the pots carefully so that little suffices, and cover with some of the turfy parts of the compost. Cuttings rooted in 2½-inch pots can scarcely be accommodated in the 3-inch size, therefore provide for them 4-inch pots. When several cuttings are in one pot they will turn out better when well rooted, and can be divided readily without the soil falling away from the roots. All cuttings do not root alike. Some are rather slow in the process, and it may be found necessary to divide and pot them while yet they have few roots. The soil frequently does not adhere to these, but falls away, hence the roots must be placed directly into fresh compost, which they frequently take to readily. Before placing the plants in the pots, introduce a little compost over the drainage, on which place the plants and carefully lay out the roots in it which are free and loose. Fill in more soil, then shake the whole down by a few knocks or jars on the bench. This will usually fix the plants and the soil firmly enough for the first potting.

The best position for the newly potted plants is a frame, arranging them on a bed of ashes, which must be kept moist, and the plants not far from the glass. Water may not be required for a few days if the soil was moist when potting, but should the weather be bright syringe the plants early in the afternoon, and keep a little close at first, simply to encourage fresh root action. The close confinement must not be carried on too long: immediately it is seen that new growth is commencing afford more air. Give water as required, keeping an eye on the plants on breezy sunny days, as the soil is then liable to dry quickly. Frosty nights often occur during March, and with the plants close to the glass they may suffer if this is not protected at nights. A single thickness of dry matting will keep out much frost, and render the growth safe. The young plants are moderately tender at this period, and it is well not to allow the shoots to be frozen. If in a slightly heated frame covering the glass is not necessary, but heat for the plants is not desirable after the first week succeeding potting unless weather be severe. Small sticks may be placed to each plant as supports.

Green fly ought not, but often does, appear in the points of shoots at this early stage, and is frequently, though not always, the result of neglect in watering or giving the plants a check in some way. The best remedy is fumigation or vaporising. Dusting the infested parts with tobacco powder one day and washing it off the next is also a capital remedy. It is seldom, however, the insects are troublesome when regular and systematic attention is given in watering and the supply of fresh air.

Another evil often asserts itself at this juncture, and this is fungoid pests. Mildew and rust are the chief, and the grower wants no more, but desires ardently to free the plants of these. Mildew lays on the leaves like a white powder. Rust appears in dark detached spots. A remedy for both forms of fungus is sulphide of potassium, half an ounce

to one gallon of water. This must be sprayed upon the foliage, first picking off the worst infested leaves which can be spared. Repeat the application until all signs of the fungus disappear and thoroughly clean and healthy leaves are present only.

As the plants advance in growth give air abundantly on every favourable occasion, avoiding cold winds. When the latter are not in evidence a little daily full exposure will be highly beneficial to the plants.—GROWER.

PRIZE GRAPES.

THE accompanying photographs portray the two first-prize stands of black and white Grapes exhibited at the last Bournemouth Chrysanthemum Exhibition, by Mr. William Mitchell of Chilworth Manor, Romsey. This gardener's skill as a grower of Grapes is now well known, notably as taking many prizes at Brighton, the Crystal Palace, Winchester, Southampton, and other shows of importance during the past eight or nine years. His exhibits of that somewhat difficult Grape, Mrs. Pince, are always good, and the three bunches of it represented in the photograph were excellent. Mr. Mitchell, like other good growers, believes in plenty of water and air. His success with that king of Grapes, Muscat of Alexandria, is equally good. The three bunches of that variety at Bournemouth Show were of a beautiful amber tint, and exquisite in shape.

The one Grape that does not succeed at Chilworth is Gros Colman, which seems the case with many growers. My experience of this variety is that it requires a long season to perfect it. It is a first-rate Grape for invalids, and in my opinion is immensely superior if allowed to hang on the Vine to acquire sweetness, which it does not seem to do if cut much before the leaves fall. If started early and given a little fire heat in autumn it is usually of a better colour than if treated as is often done with Black Alicante, that is allowed to come on late and given no fire heat in autumn.—W. J. GRACE, *Bickton, Fordingbridge*.

NOTES ON FIGS.

THE earliest trees in pots will need assistance in swelling the fruit. A top-dressing of rich material applied to the surface of the pots, space being provided for this purpose by a layer of turves placed around the rims, will afford steady supplies of nutriment. The dressings, however, should not be heavy, but a little of the rich compost supplied at weekly intervals. Liquid manure will also be useful in sustaining the health and vigour of the trees, it being better to afford a varied rather than a uniform regimen. Thus, watering with liquid manure from stable or cow house tanks, or Peruvian guano, 1 oz. to a gallon of water, will act better if a sprinkling of some approved fertiliser be given about every ten days or a fortnight. Let the water or liquid be of the same temperature as that in which the pots are placed, as a check may be fatal to the crop. Dribblers are of no use, and insufficient supplies of liquid nourishment often cause the fruit to fall.

In order to effect free development the atmosphere must be genial, syringing twice a day when the weather is bright, but avoid keeping the foliage constantly wet. In dull weather damp the paths and walls instead of syringing the trees, but an occasional syringing will be necessary to keep down red spider. If this pest appear paint the hot water pipes thinly with sulphur, using a cream of freshly slaked lime for mixing. To give the foliage consistence and enable it to evaporate freely, commence ventilating a little at 70°, increasing it with the advancing sun to 85°, which ought not to be exceeded before noon, a rise of 5° to 10° after closing being beneficial. A night temperature of 60° to 65° in mild weather, and 5° less in severe is suitable, the lower temperature being safer with a rise of 10° by day in dull cold weather. Crowding the trees should be avoided, also very close pinching, it being better to tie out or down as the growth advances, confining the stopping to nipping off the points of the unruly shoots at the fifth or sixth leaf, rubbing off those not required. This will usually give good results in the second crop.

Planted-out Fig trees that were started at the new year now require disbudding and stopping. It is bad practice to leave more growths than there is room for, and equally disastrous to allow vigorous shoots to monopolise the sap. They should be stopped at about the sixth leaf, this also favouring the swelling of the first crop Figs and their satisfactory flowering, which is essential to their perfecting. Liberal supplies of water or liquid manure, not too strong, will be required betimes, and a mulching of rich compost attracts the roots to the surface. Where the trees are in shallow and narrow borders roots may be encouraged from the collar or stem by placing pieces of fibrous turf and partially decayed manure in contact with it, and by extending the material outwards a number of feeders will be secured. If these are supplied with water or liquid manure or top-dressings of chemical manures they will greatly assist the second crop of fruit. A night temperature of 55° to 60° will be suitable. It is advisable to give a little air at 65°, increasing the ventilation with the temperature, and reducing it in like manner, closing at 70°, syringing twice a day, and otherwise maintaining a genial atmosphere.—G. A.

NOTES ON FRUIT UNDER GLASS.

THE advent of early spring, accompanied, as it is, or at any rate is expected to be, by warmer and brighter weather—free from the fog, which all cultivators around London have so much reason to

Where flowers are open on the Peach trees it is an excellent plan to pass over them lightly with a rabbit's tail, tied at the end of a rod, in order to aid fertilisation. Unless this is done a good set of fruit cannot be depended upon so early in the season. For many years we have made a practice of doing this, and largely attribute our heavy crops of fruit to its effectiveness. The tiny Peach shoots also must be gradually thinned, a few of them (about one-third) every other day.

Winter Cucumbers are rather difficult to manage successfully, especially if a long spell of dull weather is experienced. Although plants which become well established in their permanent quarters by October are very satisfactory for winter fruiting up to January, we find that a house planted early in November (although the occupants of it are never so strong and healthy as earlier established plants) produces some few fruits throughout the winter months. At the present time, as the weather improves week by week, they make fresh growth, and we are now cutting fruits from them, and shall continue to do so until March, when plants from seeds sown in December will come into bearing. The earliest Melons, sown also in December, for yielding fruit by the month of May, are in 48-pots, ready to be planted out on a hotbed so soon as this is prepared for them, while the seedlings from the second sowing are well rooted in small pots, and will soon require moving into larger ones.

In many gardens the earliest Strawberry fruits are now swelling. To insure as good a development as possible at this season they ought to be placed on a shelf near the glass in a warm Pine pit, where the night temperature does not fall below 70° Fahr. Syringe them frequently and water with liquid manure. Unless a house is available solely for Strawberry culture these plants entail a great deal of labour

in a short time. Until the flowers are produced and commence to open a Cucumber house is an excellent place for them, although we always endeavour to have a heated pit filled with leaves wherein to plunge the pots for a few weeks before. As soon as the flowers expand it becomes necessary to transfer them to another house where more air can be given, and again after the fruits are set a warm moist atmosphere is requisite.

It is most disheartening to attempt the culture of Beans during

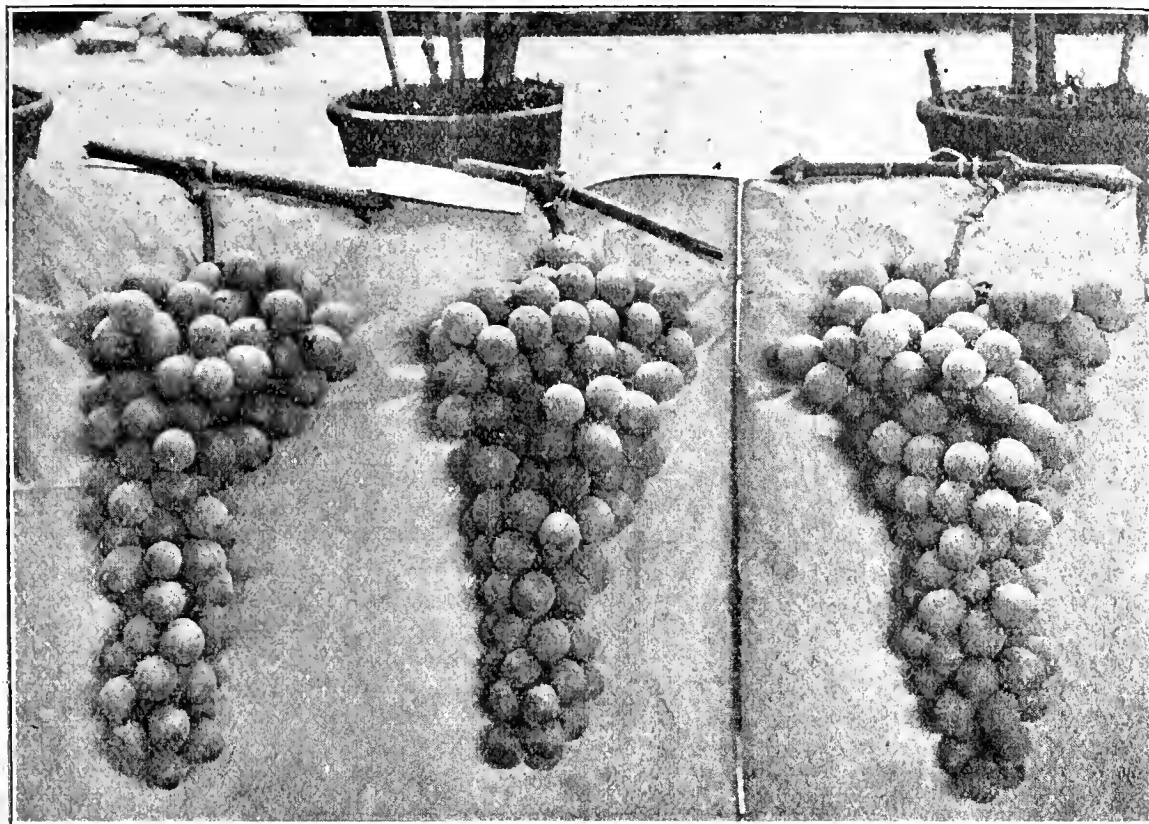


FIG. 46.—GRAPE MUSCAT OF ALEXANDRIA.

dread—brings in its train a large increase in garden work, no less to that of the outside departments than of the section under glass. At the present moment, however, it is more particularly to the work connected with the latter that I would refer, and then only to those houses devoted to the cultivation of forced fruits and vegetables. By now all vineries and Peach houses should have been thoroughly cleaned and set in order for another season; the early ones, of course, will have been started for some time.

Our method for cleansing the Vines and vinery is first to burn a small amount of sulphur in the house, after closing the latter. This is accomplished by placing a 6-inch pot in the centre of the vinery, half filling it with red hot coke; upon this a good handful of sulphur is placed, and the fumes arising from it are allowed to fill the house. This may seem a somewhat dangerous practice to recommend, but we have not found any evil results to accrue from following it, when carefully and judiciously performed; and it is certainly a most excellent method of cleansing a vinery of insect pests. The following day the Vines are brushed over (taking care not to touch the buds) with a solution made by mixing 2 lbs. of softsoap with a little warm water, and when the two have become thoroughly incorporated adding two wineglassfuls of paraffin. Three gallons of warm water are then added, and the insecticide is ready for use. If other important work presses, instead of brushing over the Vines we simply syringe them with the above mixture, at the same time endeavouring to apply this to all holes and corners where mealy bug is likely to be hidden. Finally the vinery is well washed down with a large hose, and if the walls need to be limewashed this is done. We always remove a few inches of the surface soil from the border after the house is finished, and top-dress with fresh loam, with which artificial manure has been mixed.

In the Peach houses we do not use sulphur, but simply apply the hose to the woodwork and other surfaces, and syringe the trees with softsoap and warm water only. In the earliest Peach houses and vineries there will be much to occupy one's time. In the former disbudding is needed, and in the latter stopping and tying the shoots require attention.

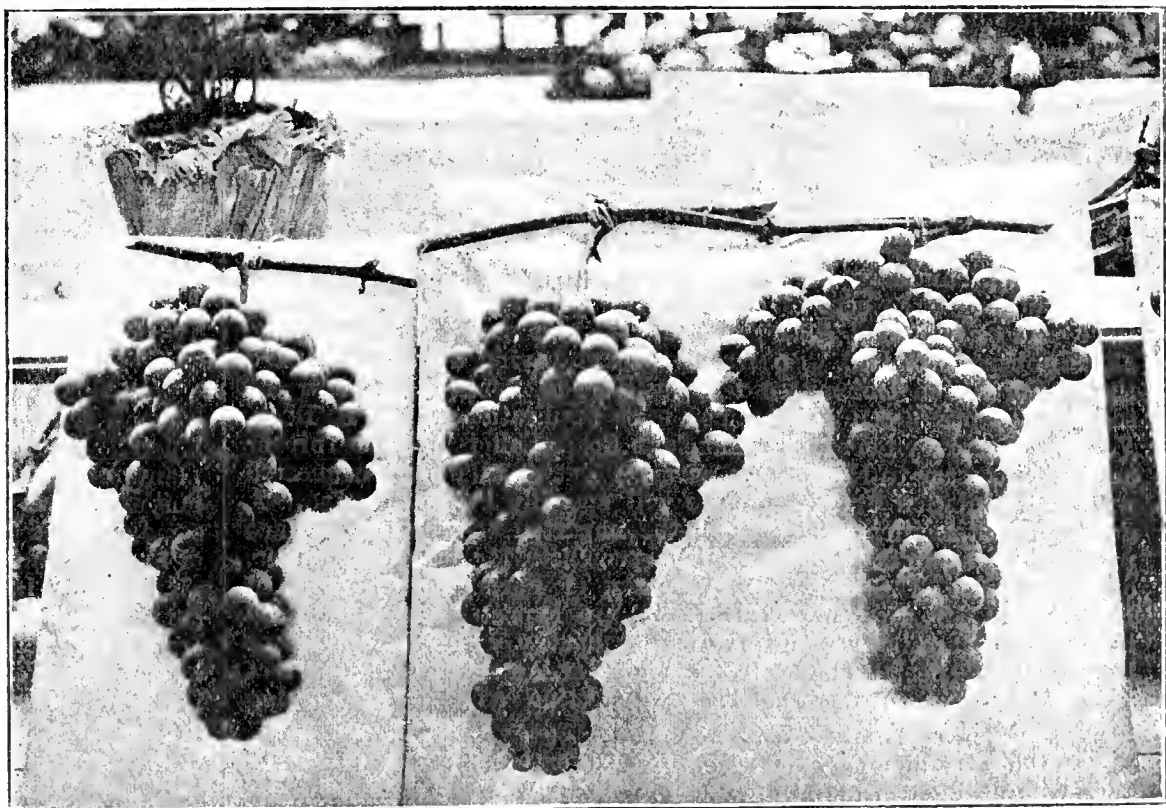


FIG. 47.—GRAPE MRS. PINCE.

winter within reach of London fogs. We have this season lost several hundreds of pots of these plants by reason of heavy fogs causing the flowers to fall. When Beans should be sown depends, of course, on the time they are required, and will therefore be governed by local

circumstances. In spring Beans may be gathered in six or seven weeks from sowing, though in winter eight or nine weeks must elapse between these two operations. We find 8-inch pots to be the most suitable, though before Christmas 6-inch are to be preferred, for growth is not then so vigorous, nor is so much water required as later in the season.

The flowers are just opening on our Tomato plants for spring fruiting. These are raised from seeds sown in September, gradually shifted into 10-inch pots, and in December are plunged in a bed of leaves made up in a warm pit. A most useful crop of fruit is gathered from them during March and several succeeding weeks. Seedlings from successional sowings, now 3 or 4 inches high in small 60-pots, will probably require transferring to larger pots, and ought then to be removed from the intermediate temperature, in which when young they grow best in winter, into cooler quarters, always keeping them near to the glass. In the case of Tomatoes for early spring fruiting, when they are in flower artificial fertilisation is essential to the production of a satisfactory crop of fruit.—H. H. T.

THE SWEET PEA BICENTENARY.

UNQUESTIONABLY the popular flower for 1900 will be the Sweet Pea, and this is not to be wondered at when the ease with which these delightfully fragrant flowers can be cultivated is considered, or when memory recalls the exquisitely beautiful colour, shades, and combinations seen in 1899. The Sweet Pea also shows some amount of variation in form, which is the more remarkable in these days when hybrid flowers are abundant, for the Sweet Pea has been evolved by the patience of the florists from one species—viz., *Lathyrus odoratus*, introduced 200 years ago. If other proof were needed that the Sweet Pea is to be the flower of the year, it is to be found in the enthusiasm with which the project for celebrating the bicentenary of its introduction at the Crystal Palace, Sydenham, on July 20th and 21st next, is being supported by amateurs, professional gardeners, and seedsmen throughout the United Kingdom.

On February 23rd the second meeting of the Celebration Committee was held at the Horticultural Club, Hotel Windsor, Victoria Street, S.W., when Mr. George Gordon, V.M.H., Chairman of Committee, presided over a good attendance that included members from towns as far distant as Birmingham and Cardiff. Accepting special prizes and finally revising the schedule was the chief work of the evening; and now this part of the business has been completed, we are at liberty to state that thirty-four classes are provided, none with less than four, and some with five, prizes. These classes range from one for one hundred bunches of Sweet Peas, with a first prize of £10, down to those for a single bunch of one variety, with a first prize of 8s. It is difficult to see how a more comprehensive schedule could have been drawn up, for provision is made alike for the small and the large grower, the artisan and the millionaire, while the value of the Sweet Pea for a home decoration will be demonstrated in classes for table decoration, florists' designs, epergnes, baskets, and bouquets. The total prize money offered amounts to £140, and in addition to this a fine champion silver cup is offered for the best amateur exhibit at the celebration show. In no less than nineteen classes the prizes are offered by well-known horticultural firms whose names will appear in the schedule that will be ready for publication immediately.

In the preliminary notice of the Committee, published less than two months ago, the cost of carrying the celebration to a successful issue was estimated at £300; and towards this sum nearly £230 has already been promised. So much success having already attended their efforts, the Committee feel justified in hoping that now the schedule of prizes can be obtained upon application to Mr. R. Dean, V.M.H. (Honorary Secretary), Ranelagh Road, Ealing, W., the further amount necessary to the proper carrying out of all details connected with the exhibition and conference will speedily be forthcoming. A decidedly international flavour will be imparted to the Conference proceedings, as, in addition to British specialists, Mr. W. Atlee Burpee, of Philadelphia, U.S.A.; Mons. Vilmorin, of Paris; Mr. Benary, of Erfurt, and Mr. Krelage, of Haarlem, are expected to attend, and have all meanwhile shown practical sympathy with the movement by providing special classes. The class for American raised Sweet Peas should prove not the least interesting at the forthcoming exhibition.

As the forty members composing the General Committee represent such a large area of the United Kingdom, it was thought desirable, both to facilitate matters and save the incurrence of heavy personal expenses on the part of those residing many hundreds of miles away, to form a small Executive Committee, to carry out the remaining details. The General Committee will, of course, be called as necessity demands. Those gentlemen elected to serve on the Executive Committee are: Mr. George Gordon, V.M.H., Chairman; Mr. E. Beckett, Elstree; Mr. C. H. Curtis, Brentford; Mr. J. Fraser, F.L.S., Kew; Mr. H. J. Jones, Lewisham; Mr. J. F. McLeod, Roehampton; Mr. H. A. Needs, Woking; Mr. R. Sydenham, Birmingham; Mr. H. J. Wright, Wandsworth; and Mr. R. Dean, V.M.H., Ealing.

PATSHULL.

THIS is the princely Staffordshire seat of the Earl of Dartmouth. Unfortunately, I am unable now to give any account of the house or its historical associations, while as the time of my visit precluded note-taking the account will, I am afraid, be somewhat imperfect, and fail to do the gardens, which are under the management of Mr. Halliday, proper justice. The grounds are filled with fine Coniferae and evergreens, and there are 8 acres of kitchen garden. The whole of the south wall is surmounted by a glass coping, beneath which are planted Plums and Apricots.

The houses, twenty-two in number, are principally situated in a large square, with the exception of the large conservatory, which is a short distance away. The first houses I entered were two spacious structures devoted to Melons, but which, at the time of my visit (early in January) were occupied with *Ixoras*, *Gardenias*, and *Tabernaemontanas*. Continuing this range was the early vinery, 60 feet long, planted alternately with Black Hamburgh and Foster's Seedling, with Figs on the back wall. Following this, and of the same dimensions, was a division occupied by Muscat of Alexandria Grapes, Figs again having the back wall. All the Vines are comparatively young, and Mr. Halliday evidently recognises the importance of young Vines with short spurs in contradistinction to old ones with long naked spurs. In the late vinery were hanging seventy perfectly finished bunches of Black Alicante, which for size of berry could hardly be surpassed. There are six vineries in all. I had almost forgotten the fine plants of Strawberries in the early vinery, mostly *Vicomtesse Hericart de Thury* and *Leader*, in 5-inch pots.

There are also two Peach houses, each 70 feet, and sufficiently wide to accommodate trees both on the front trellis and back wall, and their general appearance betokens the best of health. The late Peach house is 120 feet long, and in common with the others is a noble structure. Space is found also on the back walls of these for a Fig tree or two, so that a continuous supply of this delicious fruit is maintained. The Peach trees are models in training that none would err in copying.

The Palm house contained two large plants of *Monstera deliciosa* showing fruit. The roots of these have access to a water tank, which they evidently enjoy. A span-roofed stove was filled with small decorative plants of *Crotons*, *Pandanus* and winter flowering *Begonias*—viz., *Gloire de Sceaux* *President Carnot*, and *metallica*. *Malmaison* *Carnations* are a great feature, and their wonderful health, luxuriance, and vigour are a credit to Mr. Halliday and his foreman, Mr. Roberts. The same system is practised as was so successfully carried out at Rangemore and Byrkley Lodge, and I believe has been fully described in the pages of the *Journal of Horticulture* by Mr. Wm. Baidney. The house devoted to them is span-roofed, having ventilators at the top and sides. It runs north and south, and contained 1000 plants. Rust, spot disease, and insect pests are evidently unknown, the plants having that glaucous hue so beloved of enthusiasts, and their broad recurving leaves hang over the sides of the pots. The central step-like stage held 250 two-year-old plants, in 8-inch pots, with from eight to twelve vigorous shoots. The side stages had 800 last year's layers in 5-inch pots. A constant circulation of air is maintained, and should the weather be wet or foggy a little heat is afforded to maintain a buoyant atmosphere. Watering is most carefully done; the plants at no period are allowed to become very dry, while on the other hand excess is avoided.

Another structure of similar size was completely filled with hundreds of healthy young plants of tree *Carnations*, such as *Madame Carle*, *Winter Cheer*, *Mrs. Leopold de Rothschild*, *Mdlle. Thérèse Franco*, and on the side stages, mostly in 5-inch pots, were scores of young plants of Mr. Martin Smith's hybrid border *Carnations*, many of which were in flower.

Orchids are apparently not a desideratum, but one house contained a small collection of *Cattleyas*, *Laelias*, *Cypripediums*, and *Dendrobiums*. Another house was stocked with about fifty large, healthy plants of *Eucharis amazonica*, which from their grand appearance must produce immense numbers of flowers. In the same house were some splendid *Gardenias*. In various other houses I observed collections of *Freesias* and *Lilium Harrisii*. In one house there were two dozen plants of *Reinwardtia tetragyna* full of their golden flowers. *Siphocampylus Humboldtianus* is also grown, while two dozen plants of *Myosotis Imperatrice Elizabeth* in 5-inch pots were charming in their inimitable blue. *Cape Pelargoniums*, *Diosma ericoides*, and other scented-leaved plants have a goodly amount of space, and several pits were filled with Violets.

The conservatory, 100 feet by 45 feet, and 20 feet high, has a double longitudinal ridged roof. The sides, roof, and pillars are clothed with various creepers, including *Cassia corymbosa*, *Tecoma capensis*, *Solanum jasminoides*, *Plumbago capensis*, *Datura sanguinea*, and climbing Tea, *Noisette*, and *Bourbon Roses*. *Rose Souvenir d'un Ami* was noticed in profuse bloom, whilst a plant of *Luculia gratissima* had at least 150 trusses of its charming flowers. On the parqueted floor, arranged singly, were specimen *Camellias*, *Myrtles*, *Tree Ferns*, and large *Palms* with small groups of flowering plants of *Azalea Deutsche Perle* and *Freesias* at the base. On the narrow side stage I observed well-grown *Calanthe Veitchii* and a number of good *Begonia Gloire de Lorraine*.—F. STREET.



Recent Weather in London.—The weather continues very mild and unseasonable, and many persons would hail with pleasure a spell of gentle frost. Such would be beneficial to almost everyone and everything. Sunday was dull but dry throughout the day, while Monday morning was characterised by a veritable downpour of rain. It cleared later in the day, but the evening brought another deluge. On Tuesday and Wednesday it was wet and very muggy.

Northern Weather.—Snow fell on the 20th, and again on the 22nd, causing fresh blocking of roads that had just been opened, in several parts of the country. On the morning of the 21st there were 8° of frost, but latterly the weather has been dull and foggy. The afternoon of Sunday, however, was bright and fine, while Monday was dull and cold with a bitter wind from the east.—B. D., *S. Perthshire*.

The Gardeners' Charity Guild.—The fourth annual smoking concert of this Association will be held on March 14th, at 7.30 P.M., in the Great Hall, Cannon Street Hotel, E.C. N. N. Sherwood, Esq., will occupy the chair, and the proceeds will go to the Gardeners' Royal Benevolent Institution. Tickets are obtainable from members of the Guild, price 1s. each, or from the Hon. Secretary, Mr. T. Swales, 5 and 6, Clement's Inn, Strand W.C.

Chester Paxton Society.—At the usual fortnightly meeting, held at the Grosvenor Museum on Saturday, Mr. R. Newstead, F.E.S., consulting entomologist to this Society, lectured on "Recent Important Investigations on the Currant Bud Mite" and notes on the "Pear Tree Slug," Mr. N. F. Barnes in the chair. In his opening remarks the lecturer gave an account of the life history of the Currant Phytoptus, dealing with all the salient points of its economy. As a result of present knowledge of the habits of the pest it has been found impossible to apply any effective insecticide at the time of migration owing to the long period over which it is continued. He then went on to describe numerous experiments which had been conducted at Woburn with approximate results obtained. Not the least of these were a series of experiments which Mr. Newstead had recently conducted with hot water. Complete and lengthy immersion is, however, necessary for the killing of the mites, but which it is feared will also, as many other things have proved, prove fatal to the plants. The second part of Mr. Newstead's paper described many new facts dealing with the Pear tree slug, including results of experiments with insecticides, in which it was pointed out the uselessness of a top-dressing of lime. An interesting discussion followed, in which Mr. Robert Wakefield, President of the Society, Mr. G. P. Miln, Honorary Secretary, and others took part, and at the close a hearty vote of thanks was accorded to Mr. Newstead for his able and interesting lecture.

Reading Gardeners' Mutual Improvement Association.—"Horticultural Buildings" was the subject of an interesting and practical paper read before the members of the above Association on Monday last by Mr. G. H. Parsons, horticultural builder, Reading, who in a few preliminary remarks said that horticultural buildings, as compared with religious and domestic buildings, are quite modern. The last 200 years will nearly cover all records. Their necessity arose from the bringing home by travellers and others of plants and seeds that would not stand the rigours of our climate. The modern and popular taste for Tomatoes and Cucumbers has caused the erection of thousands of houses. Prolongation of season of different fruits, flowers, and vegetables, is also another prolific cause of construction. After explaining the action of the rays of light passing through glass at various angles, Mr. Parsons passed on to the consideration of glass and roof pitches, sites, forms of houses, heating, staging, pathways, brickwork, timber, ironwork, glass and glazing, and painting. Many questions were asked, and an exceedingly interesting discussion followed, in which the following took part—Messrs. Woolford, Hinton, Fry, Neve, Pigg, Purkis, Cretchley, Rigg, Bryant, Ager, and Dore. At the close a hearty vote of thanks was accorded to Mr. Parsons for his paper, and to Mr. Pigg, The Gardens, Samoa Villa, Kendrick Road, for exhibiting a beautifully coloured *Amaryllis*.

New Recreation Ground.—The Archbishop of Canterbury has consented to hand over the Lambeth Palace Grounds to the London County Council for use as a public recreation place.

Croydon Gardeners' Society.—Croydon has awoke to the fact that a mutual improvement association is necessary for gardeners and others interested in horticulture. A society has been established with the title of "Croydon and District Horticultural Mutual Improvement Society," and at a well attended inaugural meeting, on February 20th, Mr. George Gordon, V.M.H., discoursed pleasantly on combinations of gardeners. The Secretary is Mr. John Gregory, 60, Canterbury Road, Croydon.

Bristol Gardeners' Association.—The fortnightly meeting was held at St. John's Parish Room on Thursday, 22nd ult. Mr. Chas. Lock presided over a good attendance. The paper was supplied by Mr. A. Moore-Sara of Elmside, Stoke Bishop, on "The Pollen Grain and its Functions." With the help of black board diagrams he made the subject very interesting, tracing what is known of the conception of the sexuality of flowers from the time of Herodotus down to the 17th century, when in 1676 Dr. Grew in a book on plant anatomy laid down in definite terms the law of vegetative impregnation, accepted by botanists to-day, and in a greater or lesser degree understood by all present day gardeners. Dealing in detail with the subject, he described the formation of the pollen, some of the many methods of distribution, and the processes through which it had to pass until fertilisation was complete. A short discussion followed, chiefly on the advisability of forming a botany class in connection with the association. Prizes for three pots of Narcissi were secured by Messrs. Price and Ross. Certificates of merit went to Mr. White and Mr. Clarke each for an Orchid in bloom.

Irish Gardeners' Association.—The members of the above Association held their monthly meeting on Thursday last, the 22nd ult. Mr. Cotter, President, occupied the chair. Mr. A. Campbell, The Gardens, St. Anne's, Clontarf, gave a lecture on "The Treatment of Plants From Different Climates." At the outset he regretted the absence of young men, as it was to them he intended to devote his paper. He desired to impress upon young gardeners the absolute necessity of learning something more about plants than the usual routine. He should try and learn the natural conditions of the plants from the countries where they are indigenous—namely, the soil, climate, the changes of the seasons, and the temperature they thrive in; in fact his business was to imitate nature, and he could only acquire this knowledge from a thorough study of books of travel. He then dealt with numbers of plants as illustrative of his remarks. Several questions were put to the lecturer, which he answered, after which a discussion arose as to the wisest course in planting Vines, whether when growing or dormant. A vote of thanks, proposed by Mr. Shaw, and seconded and supported by several members, was unanimously passed to the lecturer, after which the meeting was brought to a conclusion.

Birmingham Gardeners' Association.—Much interest was centred in the last fortnightly meeting (February 19th) by the fact that there was to be a series of about 100 photographic limelight pictures of various objects of interest pertaining to garden scenes and of natural history contained in the pleasure grounds of Harborne Hall, Harborne, the residence of Walter Chamberlain, Esq., brother of the Colonial Secretary. The photographs were taken by the head gardener, Mr. C. R. Bick. Mr. W. B. Latham, the Chairman, in introducing the lecturer, remarked that he himself had had ample opportunity of witnessing the progress of the numerous improvements effected by Mr. Bick. The subject was entitled "A Walk Round Harborne Hall Pleasure Grounds," and a verbal description was given of each view, accompanied by a few characteristic humorous remarks and anecdotes. Especially interesting were such views as the artificial "Serpentine Pond" in near proximity to the handsome and commodious mansion. The formation and furnishing of the pond was an object of Mr. Bick's special regard, and altogether it represents an ideal water garden. The "Lower Pond" is the abode of several species of waterfowl, including specimens of penguins. Effective pictures were also portrayed of a colony of ostriches and cranes in considerable variety, one or two species of the latter genus being very rare. Photos of zebra bulls and cows with their peculiar "humps," as seen in their respective quarters, the paddock and the farmyard, afforded additional interest to the display. A hearty vote of thanks was accorded Mr. Bick for his unique and interesting exposition.—W. G.

Gardeners' Royal Benevolent Institution.—We learn that his Grace the Duke of Portland has kindly consented to preside at the annual dinner of the Gardeners' Royal Benevolent Institution, to be held in the Whitehall Rooms of the Hotel Metropole on Friday, May 18th.

United Horticultural Benefit and Provident Society.—The annual general meeting of this Society will take place at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday, March 12th, at 8 P.M. Mr. S. T. Wright, of the Royal Horticultural Society's Gardens, Chiswick, has kindly consented to preside.

Railway Embankments.—It has been noticed that many plants, not natives of the locality, are to be found growing in the neighbourhood of great railroads. Sometimes the seeds of these plants have been brought thousands of miles from their natural habitat. Often they flourish amid their new surroundings, and gradually spread over the surrounding country. Thus the railroads carry unsuspected emigrants, which travel to and from every point of the compass.

Gardening Appointments.—Mr. Joseph Tindall, for nearly nine years head gardener at Coed-y-Maen, Welshpool, has been appointed head gardener to Albert Wood, Esq., Bodlondob, Conway. Mr. John Logan, late gardener to G. de Belle Ball, Esq., Lisson Hall, Swords, co. Dublin, has been appointed head gardener to W. Woodburn, Esq., The Hermitage, Rathfarnham. Mr. A. Browne, late head gardener to — Pim, Esq., of Stradbroke Hall, has been appointed to a similar position in the gardens of Mrs. Henshaw, St. Philips, Milltown, in succession to Mr. McKay. Mr. R. Reader, late foreman Marks Hall, Essex, to be head gardener to R. A. Ellis, Esq., Greenwoods, Stock, Essex. Mr. A. Ward, for the past seventeen years head gardener, and latterly sub-agent at Stoke Edith Park, Hereford, has been appointed head gardener to F. A. Bevan, Esq., Trent Park, New Barnet, in succession to Mr. W. H. Lees, who is starting business for himself as a fruiterer and florist.

Shirley Gardeners' Association.—At a recent monthly meeting of above Society, held at the Parish Room, Shirley, Mr. B. Ladhams, F.R.H.S., presided. Mr. E. T. Mellor, B.Sc., London, Lecturer in Biology in the Hartley College, Southampton, gave an illustrated lecture on the "Composition of Chemical Manures and their Application to Various Soils." This was most interesting, his first object being to illustrate by means of a series of chemical experiments, the making of a phosphate from a small portion of phosphorus, thus thoroughly explaining to his audience the nature of a "phosphate," of which there are many kinds. The application of chemical manures to the ground was shown by another series of chemical experiments to be a matter requiring considerable care. Mr. Mellor stated that some of the Colonial Government departments made an analysis free of cost of all soils sent to them, thus enabling growers to select and use the manures most useful and economical in each case. A vote of thanks was accorded to Mr. Mellor at the close of his remarks.

Royal Meteorological Society.—The monthly meeting of this Society was held on Wednesday evening the 21st ult. at the Institution of Civil Engineers, George Street, Westminster. Mr. E. Mawley, F.R.H.S., read his report on the phenological observations for last year, in which he showed that the weather for the year ending November, 1899, was chiefly remarkable for its high temperatures, scanty rainfall, and splendid record of sunshine. The winter and summer were singularly warm seasons, while the autumn was also warm, but during the three spring months rather low temperatures prevailed. In the early part of the flowering season wild plants came into blossom in advance of their mean dates, but after March they were mostly late in coming into bloom. Taking the country as a whole, the best farm crop of the year was Wheat; the yield of Barley proved also good, while Oats were slightly under average. The crops mostly affected by the dry weather were those of hay and Turnips, the latter being in most districts exceptionally poor. The only part of the British Isles where the summer drought was not severely felt was in Ireland, throughout a great part of which there was abundant keep in the pastures during the whole summer. This year was a very bad one for fruit. The yield of Apples, Pears, Plums, and Strawberries varied greatly in different localities, but was in most of them much under average. Dr. R. H. Scott, F.R.S., read a paper giving the results of the percolation experiments which have been carried on at Rothamsted by Sir J. B. Lawes and Sir J. H. Gilbert from September 1870 to August 1899.

Honour for a Gardener.—We learn that Mr. A. MacKellar, the chief of the Sandringham Gardens, has had conferred on him by the Emperor of Germany, the Royal Order of the Crown of the Fourth Class.

Mr. A. F. Barron.—The many friends of this well known horticulturist will have sympathised with him in his very prolonged illness. This has prevented his leaving the house for a considerable period, and we learn with regret that his enforced confinement has to be still further extended, as though much improved in health he must not risk the unfavourable weather conditions that now prevail.

The Tulip Tree.—The only objection I know to the planting of this tree in exposed situations is the extreme brittleness of the wood. Every year when we get the usual equinoctial gale, during the first or second week in September, the Tulip Tree loses a few branches, in number and size according to the severity of the gale of course. Our specimen is not less than 60 feet high; it is protected on the south-west by other trees, but in spite of this it suffers. The deep green of its leaves in the summer, and the golden hue of autumn, are much more attractive than its blossoms, which in my opinion are quite insignificant.—E. M.

Lawns and Other Grassy Grounds.—The full title of a quarto book of a couple of dozen pages which we have received from Messrs. J. Carter & Co., High Holborn, is "Lawns, Lawn Tennis, Cricket, Golf, and Other Grassy Grounds," and this may be considered sufficiently comprehensive to explain its contents. The information given in the various sections treated of is thoroughly sound and reliable, and will prove of much value to those persons who have such spaces to lay out and keep in proper condition. The book is printed on excellent paper, and is profusely illustrated with photographic views of many of the grounds in which Messrs. Carter's seeds have been utilised.

Weather in Guernsey.—After a dry warm autumn, the month of December set in unusually cold, with some sharp frosts in the middle of the month. Since Christmas Day we have had one long spell of wet, with only an average of about two dry days in a week, and a much varying temperature; we are in consequence very backward. The want of sun for our early crops under glass has had a very retarding effect, and in some cases they have gone off altogether especially French Beans; and unless a change comes soon the Peas will assuredly suffer from mildew. The high price of anthracite coal, too, is pressing hard upon growers, especially those who failed to lay in stocks in the autumn; the cost, including wharfage dues and carting, being now close on 30s. per ton. At this time last year we had commenced shipping Daffodils pretty freely, but scarcely any have gone this year yet; however, given a few warm dry days, and we shall soon see a very marked change. Tomato planting is being vigorously pushed on now. The early birds who planted in January will, I fear, not come off very well this time, the dull sunless weather having prevented a decent show of bloom being formed.—X.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
February.										
Sunday.. 18	S.W.	deg. 39.1	deg. 37.7	deg. 51.3	deg. 32.8	ins. 0.08	deg. 34.5	deg. 36.3	deg. 40.9	deg. 23.4
Monday..19	S.W.	51.7	50.2	52.1	38.9	0.20	38.3	37.1	40.9	37.2
Tuesday 20	S.W.	44.0	40.7	47.2	37.7	0.03	39.8	38.7	41.2	31.2
Wed'sday 21	W.N.W.	36.2	32.9	45.9	32.8	0.08	38.2	39.5	41.3	26.1
Thursday 22	S.S.W.	46.4	44.9	54.1	35.8	0.11	38.4	39.5	41.6	27.2
Friday .. 23	S.S.W.	51.2	50.1	56.2	38.4	0.03	40.5	39.9	41.8	29.5
Saturday 24	S.S.W.	53.4	51.1	56.1	50.6	0.09	43.8	41.1	41.9	47.0
MEANS ..		46.0	43.9	51.8	38.1	Total 0.62	39.1	38.9	41.4	31.7

A dull, damp week, with brief intervals of bright sunshine. Southerly winds prevailed; the latter part of the week being very mild.

PINCHING FRUIT TREES.

AFTER reading carefully "A Lincolnshire Gardener's" article on page 154, in which he advocates pinching in arguments extending over nearly two columns, I was somewhat staggered at coming to this sentence—"With unlimited space, and for utilitarian purposes, I should adopt a different method." Does this mean that if "A Lincolnshire Gardener" were a market grower, cultivating 20 acres or more of fruit trees, he would not pinch? And what is his "different method?" If it pays to pinch a quarter of an acre, it would pay to pinch twenty, or even a thousand acres, the only question being whether sufficient skilled labour was available or not. But I have yet to find the extensive market grower who pinches, or even summer prunes, and I have visited many very successful growers. On the Woburn Experimental Fruit Farm a trial of summer *versus* autumn pruning had not brought out any difference up to the autumn of 1898.—LEARNER.

SEEDSMEN'S GUARANTEES.

WHY should Mr. C. E. Pearson (page 137) assume that a seedsman who guarantees that his seeds were true to description and as ordered would have an unhappy existence? Is not such a statement calculated to create distrust of the seed trade, both in relation to its honesty and its capacity to supply to purchasers what is ordered from the seedsmen's lists? Is it not a fact that 99 per cent. of all seeds supplied to customers by good firms now, irrespective of guarantee, are found to be absolutely as anticipated when growth takes place? That being so, why make such a wry face over the guarantee clause, which is at the best anything but an honourable one if it covers such an act as was that which originated this discussion? All these quibbles about variations are beside the mark. They exist very much in the imagination, or are non-existent. Why should any seedsman who tests his seeds be afraid to guarantee their exactness to description? To me such excuses are incomprehensible.—A. D.

JUDGES AND JUDGING.

DURING the past quarter of a century the pages of the *Journal of Horticulture* have seen many discussions, all more or less valuable to the gardening community. Some of these have been participated in by large numbers of readers; while others have been confined to a limited, and perhaps I might venture to say select circle. Taken as a whole these controversies have covered a very wide area, and have embraced almost all side lights of the craft. Nevertheless, I venture to bring forth still another matter which, so far as my memory serves me, has never been thrashed out in the *Journal*, and in doing so, while I recognise that I shall incur the wrath of many of its readers, I believe the subject will be one of as broad an interest as any of its predecessors, and will be provocative of numerous letters from men of vast experience, whose just claims for an audience will probably be much greater than my own. I bring the matter forward for discussion in the honest belief that it is for the benefit of both gardeners and gardening.

Without further preamble let the question be propounded—namely, "Should the same Judges be employed year after year in the same classes at the same show?" As one who has officiated in this capacity at many exhibitions I am constrained to answer in the negative. Everyone of us can point to exhibition committees throughout the length and breadth of the land who invariably select the same men, either because they have been before, and "we know him," or because they bear names prominent in contemporary horticulture. The latter clause may, broadly speaking, be a safe one to work under, but unfortunately sufficient discrimination is not always exercised in allocating to the adjudicators the section for which they are peculiarly adapted. For example, a man who as a judge of Grapes may be unsurpassable in dealing with Chrysanthemums or Roses be very much at sea. Of course it may be argued that if a man can adjudicate on one product he will be equally capable at another, but with this doctrine I most emphatically disagree. The present is largely an age of specialism, and the man who loses his *metier*, so to speak, is liable to find many pitfalls.

But it may be said that the remarks in the above paragraph apply only to the greater shows, such as Edinburgh, Shrewsbury, York, Hanley, and others, and that smaller societies are compelled to engage men of all-round capacity for their annual events. The truth of this must be readily admitted, as it would be obviously impossible for small associations to employ specialists for their limited shows. It is, however, mainly to societies of this nature that these remarks must apply, for no one can gainsay the fact that they are inveterate sinners in the direction indicated. As regularly as summer succeeds spring they employ precisely the same men, and in doing so I hold that they do not do the best they can for those who support them—i.e., the exhibitors. Do not let it be inferred that in saying this I would impugn the integrity of the Judges; nothing is farther from my thoughts. These men may and generally do carry out the duties sought

from them in the most painstaking and conscientious manner from their own point of view, but whether in doing so they always do justice to exhibitors is quite another matter.

It must be unnecessary to state that I have my reasons for the views set forth, and as the controversy proceeds I shall be ready to place them before my antagonists and supporters (for I hope to get the latter a well as the former). For the moment, however, I shall say no more, but content myself with calling upon readers of the *Journal of Horticulture* to reply to the question here repeated, "Should the same Judge be employed year after year in the same classes at the same show?" and will subscribe myself as—AN INQUISITOR.

A CAPE FRUIT GROWERS' ASSOCIATION.

THERE has been a considerable amount of discussion in our *Journal* of late about the production of fruit at home; but does it not strike many readers, and more especially young men like myself, that there will be at the conclusion of the war, terrible though it is, a grand opportunity for opening up a trade in fruit production in South Africa for local and home markets? There are too many gardeners here at home. Can we not organise a band of men, young, intelligent, and strong, to go and take up our abode at the Cape and show men at home what Englishmen can do?

I am willing to go, and have enough to keep me for six months after my passage is paid. Who else has anything to say on this subject? Now is the time for action.—GOLD PENMAN.

AN ANCIENT PEAR.

I AM enclosing photographs of a Pear tree that was planted at least sixty years ago against my old house. In 1854 alterations in the building were made, and a glazed roofed passage was arranged from the kitchen to a new scullery and back premises. My father did not wish to destroy the tree altogether, so it was "beheaded," the skylight built round it, and the top left just outside the top of the lean-to glazed roof, to grow as it liked.

The passage, of course, was paved, and outside is a paved yard, enclosed by a wall 20 feet from the house, against which the tree grows. No sunlight, therefore, can get to the roots, and no water is given; yet we always gather a good crop, whatever the season. Three years ago I thinned a good many of the old branches, leaving younger wood, and that is the only pruning it has had. In 1898 we had a very light crop in consequence, but this year (1899) we have gathered 700 Pears, and one branch broke down from the weight of fruits. I am told the variety is Hacon's Incomparable.—M. L. GAYTON.

[The photographs were most interesting, but unfortunately they were not suitable for reproduction.]

DECADENCE OF WALL TREES.

My generous opponent, by the tone of his rejoinder on page 117, engenders the feeling that one would rather join hands with him than bring any more maxims to bear upon his position. Moreover, any amount of cross firing will probably leave the matter pretty much the same. One word more, however, in order to clear up a statement of mine which is somewhat hazy. With reference to his fourth paragraph anent "the wall trees of the Queen," the maxim I employed which drew the fire of his piquant pen was really intended to cover the whole ground, but, somehow, between the penning and the printing part was lost, causing the remainder to fall short and to fall flat. If "A. N. O." is a student of Dickens he will recollect in "Martin Chuzzlewit" a certain newspaper being addressed "Queen Victoria, Tower of London," and the effect it was contemplated to produce. His original article impressed me as being quite as likely to reach its intended destination. There are gardeners *and* gardeners, but one feels it to be somewhat derogatory to the vocation to class as such men who from sheer ignorance or wilful neglect bring about such a muddle as my courteous counter-critic depicted.

The examples given by "A. N. O." on the same page are very pertinent, but come clearly under those heads—viz., ignorance or neglect—and for either it is hard to find an excuse. In one case the man has accepted the responsibility of a position for which he has neither qualified himself nor been qualified to fill. He may be a splendid plantsman, a grand vegetable grower, all of which is magnificent; but it is not gardening as I understand it in its application to the upkeep and the output of a gentleman's garden. Should such deplorable results arise from neglect then comment is needless. In either case the man responsible for it is not a gardener in the comprehensive sense of the term; that he may be called so is another matter and another tale. There is, however, a grand moral in "A. N. O.'s" communication which will, probably, be utilised for the benefit of the rising generation by—A. N. OLDHEAD.

THE WEATHER OF 1899.

THERE is a weather proverb which says, "A dry year never beggars the master." Recent years have proved that this saying is on the whole a very true one, but for once it has undeniably proved a failure; and it is certain that all interested in farming and all other branches of agriculture will long remember the disastrous effects upon vegetation of the great heat and drought of the summer of the last year but one of the nineteenth century. The summer, indeed, was by far the most remarkable within living memory, and its great heat is undoubtedly the most important meteorological phenomenon of the year.

In many respects the chief features of the year bear a striking resemblance to those of its predecessors. The same warmth in each case characterised the opening months, followed by a cold spring, hot dry summer, and mild autumn. In some other respects, however, the weather was vastly different; December in the one case being warm almost beyond precedent, and in the other much colder than the average; while in 1898 the warmth at the commencement of the year was accompanied by wonderfully fine dry conditions, but in the year under review January and the first half of February were characterised by very stormy and wet weather.

These unsettled conditions were succeeded by very fine dry weather during the latter half of February, and also throughout the greater part of March, with the exception of a very severe period of cold from the 16th to the 25th. April was wet and somewhat cold. May, for the second year in succession, was very cold; fine weather, however, prevailed at the commencement and end of the month, the middle portion being wet. With June came an entire change from the inclement conditions of the spring to sunshine and warmth, this continuing with the exception of a few cold days at the commencement of July until half of September was gone, when autumnal conditions set in. After a period of wet and somewhat stormy weather during the next fortnight conditions again became settled, and the greater part of October was wonderfully fine, although at times foggy in some districts. November commenced with ten days or so of considerable rainfall and a good deal of wind, but then again fine weather returned, lasting until the close of the month, with much fog, however, and generally dull skies. The last month of the year was as a whole cold and wintry.

Although it is impossible to give an exhaustive account of the rainfall of the year, its general distribution over our islands will be seen from the following table, which gives the details of fall at eight selected stations.

1899.	Aberd'n	Leith	Liverp'l	Valencia	Bristol	Jersey	Oxford	London
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ...	3.30	3.38	2.93	7.66	5.17	4.64	2.85	2.57
February...	2.21	1.24	1.45	7.21	3.91	1.84	1.92	2.05
March ...	2.71	1.78	1.06	3.56	1.17	0.65	0.25	0.43
April ...	3.15	2.00	2.23	5.80	3.46	3.22	1.83	2.47
May ...	2.72	3.49	2.19	2.83	2.27	2.55	1.37	1.27
June...	1.12	1.28	2.98	2.56	1.54	1.11	1.05	0.92
July ...	3.73	3.12	2.19	2.60	0.68	0.54	1.28	0.86
August ...	0.72	0.56	2.16	5.36	1.44	0.41	1.80	0.30
September	3.65	2.96	3.46	3.33	3.79	3.28	2.28	3.43
October ...	0.75	0.92	2.93	3.30	3.69	1.14	2.59	2.22
November	1.32	1.89	1.09	5.43	3.12	3.86	2.52	4.23
December	4.81	2.17	2.72	11.29	3.41	3.02	1.30	1.28
Total fall...	30.19	24.79	27.39	60.93	33.65	26.26	21.04	22.03
Averages ...	30.84	23.35	28.93	55.80	34.88	34.18	25.72	24.84
Difference } f'm av'age }	-0.65	+1.44	-1.54	+5.13	-1.23	-7.92	-4.68	-2.81

The rainfall upon the whole, therefore, was generally deficient, although not nearly to the extent that it was in 1898. It will be seen that March and the three summer months show the greatest deficiency, the falls at some stations during the first and last of these months being remarkably small. In December unusually heavy rainfalls occurred in the west and south of Ireland, totalling, it will be noticed, to over 11 inches at Valencia.

Mean atmospheric pressure over our islands was generally in excess of the average after February, with the exception of April, September, and December. The greatest pressure reported at 8 A.M. was 30.77 inches at York, on January 26th: and the least 28.30 inches and less, over the south-west of our islands, on December 29th—a range of $2\frac{1}{2}$ inches.

The mean temperature of the twelve months is considerably in excess of the averages. In the second table given the means for each month and also for the year at eight stations situated over our islands will be seen.

1899.	Aberd'n	Leith	Liverp'l	Valencia	Bristol	Jersey	Oxford	London
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January ...	36.4	38.3	41.0	44.0	42.2	47.1	42.0	43.0
February	38.8	40.0	41.1	46.2	42.7	45.9	42.3	42.9
March ...	40.2	42.2	42.7	45.9	41.9	44.9	41.5	41.5
April ...	43.1	44.8	46.5	48.5	47.0	49.7	47.5	48.5
May ...	46.1	47.8	50.0	51.8	51.4	53.4	51.5	53.0
June ...	56.1	58.1	59.5	58.5	61.0	61.8	60.9	62.8
July ...	59.7	60.9	56.1	60.4	64.2	64.4	65.5	67.5
August ...	57.6	61.4	63.8	64.1	66.7	68.6	65.6	68.2
September	52.2	54.6	55.9	57.4	58.3	62.2	58.0	59.0
October ...	48.7	49.2	49.4	51.8	49.6	55.6	48.5	50.1
November	46.8	47.8	48.8	51.3	43.5	51.6	46.7	47.8
December	37.0	35.8	37.0	45.8	36.6	42.3	35.9	37.1
Mean ...	46.9	48.4	49.7	52.1	50.8	54.0	50.5	51.8
Av. mean	46.2	47.7	48.8	51.0	49.2	51.9	48.8	49.9
Departure } f'm av'age }	+0.7	+0.7	+0.9	+1.1	+1.6	+2.1	+1.7	+1.9

The means are those of the daily maximum and minimum readings, and are not corrected for diurnal range. The means for only two months, May and December, show a general deficiency of temperature over our islands. On the other hand the figures for February, the three summer months, and November are almost without exception in excess. January also was warmer than the average, except in the North, and October excepting central England, where the anti-cyclonic conditions prevailing throughout the greater part of the month caused somewhat low temperatures during the night time. Taking the year as a whole, it was slightly cooler than its predecessor, chiefly owing to the great difference of the means for each December, this amounting to no less than 10° at some stations. The greatest temperature reported over our islands during the year was 90° at London on August 25th, and the least 8° at Loughborough on December 14th, a range of 82° .

With the exception of the short period of excessive cold in March, the year was entirely free from severe snowstorms. During this period some heavy storms occurred in the north and north-east. Thunderstorms were fairly frequent throughout the summer months. Many storms also occurred during the winter, spring, and autumn, March being the only month during which none were reported. In the south-west of England some exceedingly heavy storms occurred early in February.

Gales were very frequent during January, and the earlier parts of February and November; but taking the year as a whole they were not very prevalent. The most serious occurred on January 12th, generally over our islands; and on April 7th on our western coast. —H. H. HARDING, F.R.Met.Soc., Bristol.

BEGONIA GLOIRE DE SCEAUX.

THIS Begonia is one of the handsomest both in leaf and flower of the winter-flowering section of these useful and attractive plants. It merits extensive culture, alike for its compact habit of growth and free flowering qualities at a season of the year when flowers are not plentiful. It is moderately tall in growth, though at the same time of an upright, sturdy, and compact character. The leaves are large and of a rich bronzy lustre on the upper surface and crimson beneath. They are more than ordinarily attractive, and of course add to the value of the plant as a decorative specimen, and enhance the beauty of the flowers, which are freely produced, and are large, flat, of a soft, silky, rosy pink colour. The compact habit is chiefly due to its branching freely when it has become fairly established in vigour, and the roots have taken possession of the soil. When a plant commences to flower it continues to do so almost perpetually, if in a suitable temperature for making progress, and the plants have previously been well grown.

B. Gloire de Sceaux (fig. 48), is chiefly propagated from cuttings, which are produced from the older plants after flowering. It is frequently necessary to curtail the tendency of the plant to flower in order to obtain cuttings to provide stock for another season, young plants usually being the better and more vigorous bloomers. The cuttings may be obtained from the young growths which push from the base, and ought to be inserted during this month or early in April if good plants are required. Prepare a light, sandy, open compost of loam, leaf soil, peat, and sand. Place this into 3-inch pots, and insert the cuttings an inch apart around the edges. Stand the pots on a moist base in a brisk bottom heat, and in a top temperature of 65° to 70° . They may be kept fairly close to maintain the cuttings fresh and encourage their rooting, and when this has taken place allow growth to proceed for a time, then take off the tops. If more plants are wanted insert these as cuttings. When the topped plants have pushed fresh growth turn them out of the pots, divide, and pot singly in 3-inch pots, using similar compost with the addition of charcoal crushed fine.

The newly potted plants will require heat and moisture to encourage growth. Water carefully, which means only give light supplies at first. Syringing them is perhaps the best method of supplying moisture in the early stages. The soil being moist when

young succulent growth. After a fair start has been made progress will be remarkably free, and it is desirable to top the growths again, thus securing the foundation of a bushy habit, and obtaining larger plants.

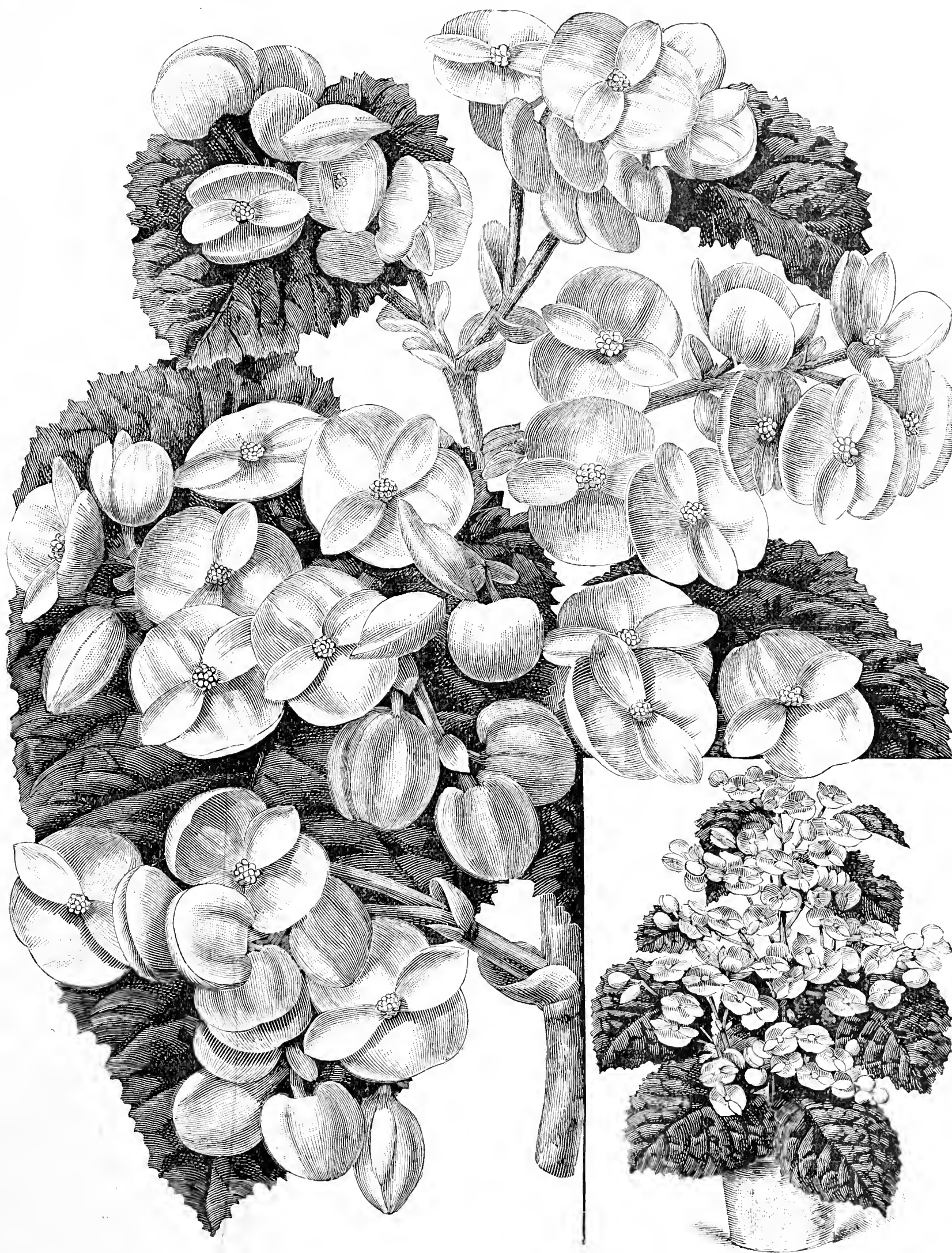


FIG. 48.—BEGONIA GLOIRE DE SCEAUX.

potting, and the pots stood on a moist base, it requires little water to maintain it in the right condition. Accord the plants a light position, but they will be better if kept from direct sunshine, which at this period is likely to be of a scorching character, and too much for the

When it is apparent that the pots are too small or soon will be, preparations must be made for a shift into a larger size. From 3-inch move into 5-inch, this potting taking place in July or August with those rooted earliest. September should be the latest period for

finally potting those rooted in April; 5-inch pots will be the size for the majority of the plants, but a few may have larger pots. Probably, however, the smaller pots may eventually contain the better plants, and, as a rule, when in a medium size they are more useful for decoration.

After June artificial heat is not required, but moist frame treatment ought to be given them. This is secured by standing the plants on a bed of ashes kept damp. Keep the lights on the frame, admitting a little air, and syringe lightly on bright afternoons; also shade from strong sunshine. At the end of September transfer to a greenhouse shelf near the glass, continuing to water carefully. As the natural temperature declines the plants will require artificial heat to maintain them in a healthy condition. Give them a temperature onwards through the winter of 55° to 60° at night.

About December the flowering period commences, and for the next four months it is seldom that any of the plants are devoid of bloom unless they have been cut severely. In one way even the latter is an advantage, as the loss of the bloom causes the production of cuttings, which can be utilised for the next season's stock. Afford a light position for the winter months; the plants are better stood on a moisture-holding base than on dry open shelves, but the structure should be efficiently heated. The watering must be carefully carried out, and this is best done by regular attention in examining the soil, always affording sufficient water of the same temperature as that of the house.—E.

STOPPING VINES.

THE planting of Vines and the formation of Vine borders have been so often dealt with in the *Journal of Horticulture* that I thought a few notes on stopping Vines might be more generally advantageous and useful, especially to those who have not had sufficient practical experience to thoroughly comprehend the correct methods of procedure. There are, I am aware, many systems of regulating the growth of the Vine, and perhaps most of them adopted by some of our best Grape growers vary slightly, but the broader principles are the same. Let us suppose the Vines were purchased in pots, cut down to within 18 inches of the soil, planted in February, and started into growth about the beginning of March, very slowly—in fact, it would be inadvisable to hurry them the first year, though due attention must be given to damping, watering, and airing. As soon as the buds commence to form shoots gradually disbud all except two, one near the top and the other close to the base; the former should be carefully supported if necessary, and the basal shoot ought to be stopped when it has made half a dozen leaves. The latter assists to thicken the old portion of the rod, though many successful growers whom I know retain the leader only.

As the young rod makes progress side shoots will be made which must be stopped—i.e., pinched with the thumb and finger at the first leaf. The young leader will also require stopping at 5 feet, but it must be allowed to form another leader, which should be taken up straight as before; the side shoots from this will not require stopping as above recommended, but should be allowed to run almost wild. The first 5 feet of the new rod which was stopped will thicken considerably, and the basal buds will plump up in grand style, showing how the plant appreciates the treatment to which it has been subjected. In December the Vines should be pruned, the leader to within about 4 feet from the new rod, and the side shoots back to the basal bud. If Grapes are urgently wanted allow two medium-sized bunches to each rod, otherwise do not crop until the following year, as more roots will then be made.

If the young Vines are planted 4 feet apart the shoots should be stopped from two to six leaves past the bunch, but in this respect the grower must be guided by the vigour. If a shoot has the appearance of grossness stop it at two leaves beyond the bunch and pinch the lateral growth at the end of such shoot to one leaf also, but aim at allowing each Vine the full space allotted to it; but never tolerate crowding. The young shoots which form on the side or current year's growth from the spur must always be stopped at the first leaf when quite young, and the Vines should be examined weekly, for if the growths are allowed to get too large a severe check may be given to the Vines. When spurs are formed after the first year's growth they generally have one or two shoots too many on them; retain one only, removing the others promptly.

There are occasions when an extension of lateral growth is decidedly advantageous to all Vines, whether weak or otherwise. For example, a house of Muscat of Alexandria under my charge had been addicted to shanking, so last year I allowed these Vines to make as much lateral growth as possible. At what would be the beginning of the colouring stage had the variety been a black one, and when all fear of shanking had gone, the lateral growth (some of which was 3 yards long), was very gradually removed. The result of this treatment was quite a success, and I am looking hopefully for equally as

good results this year, provided the routine operations of watering, airing, and damping are properly attended to. This fine Grape is much benefited by shading with a treble thickness of fish netting if the panes of glass are of a large size. But as soils and aspects vary so much in different localities, it is necessary to watch carefully throughout the whole period of the Vine's growth to overcome the nearly insuperable difficulties many gardeners have to experience when taking charge of fresh vineries which have been indifferently managed in the past.—A. J.



THE COLOUR OF MARÉCHAL NIEL.

IN answer to "Practice," it is light, and especially sunlight, that influences the colour of this Rose. Shading always increases the yellow, and lessens the red in Roses. I have seen blooms of this Rose in a sunny season on a south wall, not only as pale as the so-called white variety, but even distinctly flushed and stained with red. It is natural, therefore, "to find great variations of colour in blooms upon the same plant, and at the same time," for those which happen to be the most shaded by the foliage or anything else are sure to be of a deeper yellow colour.—W. R. RAILLEM.

CLIMBING ROSES.

THESE are usually most appreciated when in bloom early or before any in the open, and by attending at once to the pruning, tying in or nailing, this will be all in favour of early and abundant flowering. Not pruned at all they soon become unsightly, and of comparatively little value. All must not be treated alike. Hard pruning in the case of such strong growing Noisettes as Maréchal Niel, Bouquet d'Or, W. A. Richardson, L'Idéal, and Aimée Vibert, would lead to the formation of still ranker growth, and few blooms. Thin out the spray, cut away all growth badly placed for training, and only remove the unripened ends prior to securing to the walls and trellises. Strong young trees of Gloire de Dijon and Madame Berard should not be severely pruned, and may well be treated similarly to the Noisettes, but older trees should be freely pruned in order to keep up their vigour. Other Teas, as a rule, ought to be pruned moderately hard, as they cannot well be grown too strongly. Remove much of the spray, and cut back all shoots reserved to within three or four joints of their starting point last spring other than those required for furnishing blank space.—WESTERNER.

PRUNING MARÉCHAL NIEL.

MY remarks on page 92 have been noted by more than one of your correspondents, and they appear to bear me out in this—that until the plants have filled their allotted space with growth it is unwise to prune hard. But it seems to me not so much a question of space to be filled as to which is the better mode to produce superior growth, so that the blooms shall eventually be of fine quality. The example I gave was, I thought, a very good one in favour of little pruning.

After the plants have filled the trellis with growth, what then? Some pruning is, of course, necessary, otherwise a dense thicket of mostly useless stems and branches would follow in a few years, and although I have hitherto had very good results by adopting the plan of a clean sweep of all growths right down to their base after flowering, I may have had better by being more sparing with the knife. Such pruning must severely check the plant above and below; and for a time, as the new shoots start rather weakly, some nursing is required to prevent an attack of mildew, which at pruning time in the case of Maréchal Niel so readily comes.

In the future, then, my idea in the case of young plants is to merely cut away the unripened points of long growths, and entirely remove very weakly ones. Then when the space is filled thin out about half the branches each year to provide a supply of new rods from the base, and the side stems that have produced blooms will be spurred in the whole length of the remainder.

"S. S." asks (page 132), what became of the old shoots on the unpruned plants noted. These were not numerous after the first year's growth, nor had any reached the top of the house on either side. They were left untouched, and the "long clean rods" of last season's growth did not necessarily spring from the base, as it is well known that plants of Maréchal Niel in growing have a habit of pushing out long flowerless shoots in unlooked-for places when all is going on well with the roots below. A hint in the remarks of "W. R. Raillem" (page 120), that it is well when pruning this Rose in a growing state, to do it gradually, is one that would certainly seem worth remembering.—H. S.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—FEBRUARY 27TH.

THE meeting on Tuesday was in all respects a splendid one, the Hall being almost quite full of excellently grown produce. Orchids were magnificently staged by both trade and private growers. Fruits were neither numerous nor particularly meritorious.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); and Messrs. Jas. H. Veitch, E. Shaw Blaker, W. Poupart, M. Gleeson, G. Kelf, A. Dean, S. Mortimer, G. Miles, W. Bates, G. Reynolds, G. Wythes, R. Balderson, F. Q. Lane, J. Willard, E. Beckett, H. Markham, and G. Bunyard, and the Rev. W. Wilks.

Mr. R. Bullock, gardener to C. Pearce Serocold, Esq., Taplow Hill, Maidenhead, staged a collection of Apples in good condition, which included capital dishes of Cox's Orange Pippin, Blenheim Pippin, Waltham Abbey Seedling, Norfolk Beefing, and Tower of Glamis (silver Banksian medal). Mr. G. Wythes, gardener to the Duke of Northumberland, staged *Vanilla planifolia*, both growth and fruits. Mr. Jas. Hudson, gardener to L. de Rothschild, Esq., Gunnersbury House, sent some ripe fruits of the common Papaw (*Carica papaya*) and received a cultural commendation. A capital dish of Parsnip Tender and True was staged by Mr. E. Beckett, gardener to Lord Aldenham, Elstree, which received a cultural commendation. A number of Apples and a few Pears were before the Committee, but only one secured an award.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Drury, O. Thomas, H. B. May, G. Nicholson, G. Reuthe, R. Dean, Wm. Howe, J. Hudson, J. Jennings, R. Fife, R. B. Lowe, C. J. Salter, C. E. Pearson, J. W. Barr, Chas. Jefferies, J. Fraser, G. Gordon, W. H. Lees, Jas. Walker, C. E. Shea, H. J. Cutbush, E. H. Jenkins, H. J. Jones, E. T. Cook and G. Paul.

A table of *Lachenalia Nelsoni* in pots was staged by Mr. W. Allan, gardener to Lord Suffield, Ganton Park. The plants were a mass of golden yellow spikes, and clearly evinced high cultural treatment (silver Banksian medal). Messrs. H. Cannell & Sons, Swanley, arranged a large table of *Cyclamens* in grand condition; the foliage left nothing to be desired, whilst each plant without exception was literally covered with well-developed flowers in every shade known to *Cyclamen* growers. The white, rose and crimson varieties arranged in blocks were particularly effective (silver-gilt Banksian medal).

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, arranged his first group of spring flowers at the Hall, which consisted of *Narcissi* in variety, and included *N. bicolor Horsfieldi*, Emperor, Golden Spur, rugilobus, Sir Watkin, and Henry Irving among others; also a collection of *Hyacinths* in variety, the whole arranged with Palms and Ferns (silver Banksian medal).

Messrs. Barr & Sons, Covent Garden, staged a group of hardy flowers. The *Hellebores* were interesting, and staged in variety. The chief forms were *H. orientalis punctatus*, *H. o. ruberrimus*, *H. o. antiquorum* James Atkins, and *H. o. a. elegans*. Pots of *Narcissi*, such as cyclamineus, *N. coronatus*, and *N. minimus*; also a collection of *Crocuses* and *Cyclamens*. Messrs. Peed & Son, West Norwood, arranged a semicircular group of foliage and flowering plants, which included *Kentias*, *Dracenas*, *Crotons*, *Pandanus*, and *Abutilons* in the foliage section, while *Azaleas indica* and *mollis*, *Begonias*, *Cyclamens*, and *Tulips* were the most prominent in the flowering plants (bronze Flora medal). Messrs. W. Cutbush & Son, Highgate, N., staged a table of spring flowering plants which were most interesting. The *Acacia Drummondii*, *Boronia megastigma*, *Daphne Mezereum*, *Ericas Wilmoreana* and *melanthera*, with *Epacris Lady Pannure* and *Diadem*, formed a unique display arranged with well-fruited plants of *Citrus sinensis*, *Aralias*, Palms, and a front of *Ficus repens* (silver Banksian medal).

From Messrs. T. S. Ware, Ltd., Tottenham, came a collection of rock and alpine flowering plants and bulbs, chief of which were *Iris reticulata purpurea*, *Hyacinthus azureus*, *Galanthus giganteus* and *Whittalli*, also some *Anemones*, *Cyclamens*, and *Saxifragas*. Messrs. Wm. Paul & Son, Waltham Cross, arranged a grand exhibit of *Camellias* in pots, and cut flowers in boxes, while the plants of *Clematis indivisa lobata* imparted a lightness to the exhibit. The large plants staged clearly demonstrate Mr. W. Paul's well-known love for the *Camellia*, though it may be under a cloud as far as public favour is concerned. But on this occasion everyone was compelled to admire the clean healthy plants and their wealth of flowers. The following varieties were well represented—*Imbricata*, *Exquisite*, *Alba Plena*, *Reine des Fleurs*, *Marchioness of Exeter*, *Halleyi*, *Teutonia*, *Mathotiana*, *Lady Hume's Blush*, *Jeffersoni*, *C. M. Hovey*, and *Montironi vera* (gold medal).

The Rose season was opened by Mr. G. Mount, Canterbury, who staged two boxes, and a number of vases of cut blooms. A box of Captain Hayward were in grand form, the colour being bright and the blooms full. Mrs. J. Laing was also of good colour and size, especially for this early date. La France, staged with 18 inches of clear foliage, was also to be admired; as was also Viscountess Folkestone (silver-gilt Banksian medal). Messrs. R. Wallace & Co., Colchester, staged a few baskets of early flowering Irises, *Anemones*, and *Galanthuses*. Four vases of Violets were staged by Mr. G. Nobbs, gardener to her Majesty the Queen, Osborne, and included large bunches of Princess Beatrice, Princess of Wales, Amiral Avellan, and Primavera.

Messrs. Paul & Son, Cheshunt, staged a vase of double white *Lilac Belle de Nancy*, beautiful in colour and nicely perfumed; also Rose Paul's Single White. From Mr. J. Downes, gardener to J. T. Bennett Poë, Esq., Cheshunt, came a beautiful plant of *Agapetes buxifolia* (fig. 49) a hardwooded plant seldom seen. A large group of *Narcissi* in pots was staged by P. Purnell, Esq., Woodland, Streatham Hill, which included some capital examples of Sir Watkin, rugilobus, Emperor, Empress, incomparabilis, and poeticus types (silver Flora medal). Messrs. F. Sander & Co., St. Albans, Herts, staged a new *Camellia* General Hector Macdonald and a double *Azalea* Louis Sander, both of which exhibited points of excellence. Messrs. Jas. Veitch & Sons, Ltd., Chelsea, continue to exhibit their *Rhododendron* hybrids, which are as attractive as ever, the colours being exceedingly bright.

ORCHID COMMITTEE.—Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. Jas. O'Brien, W. Cobb, J. Douglas, H. A. Tracy, H. T. Pitt, W. Thompson, E. Hill, J. Jacques, T. W. Bond, F. J. Thorne,

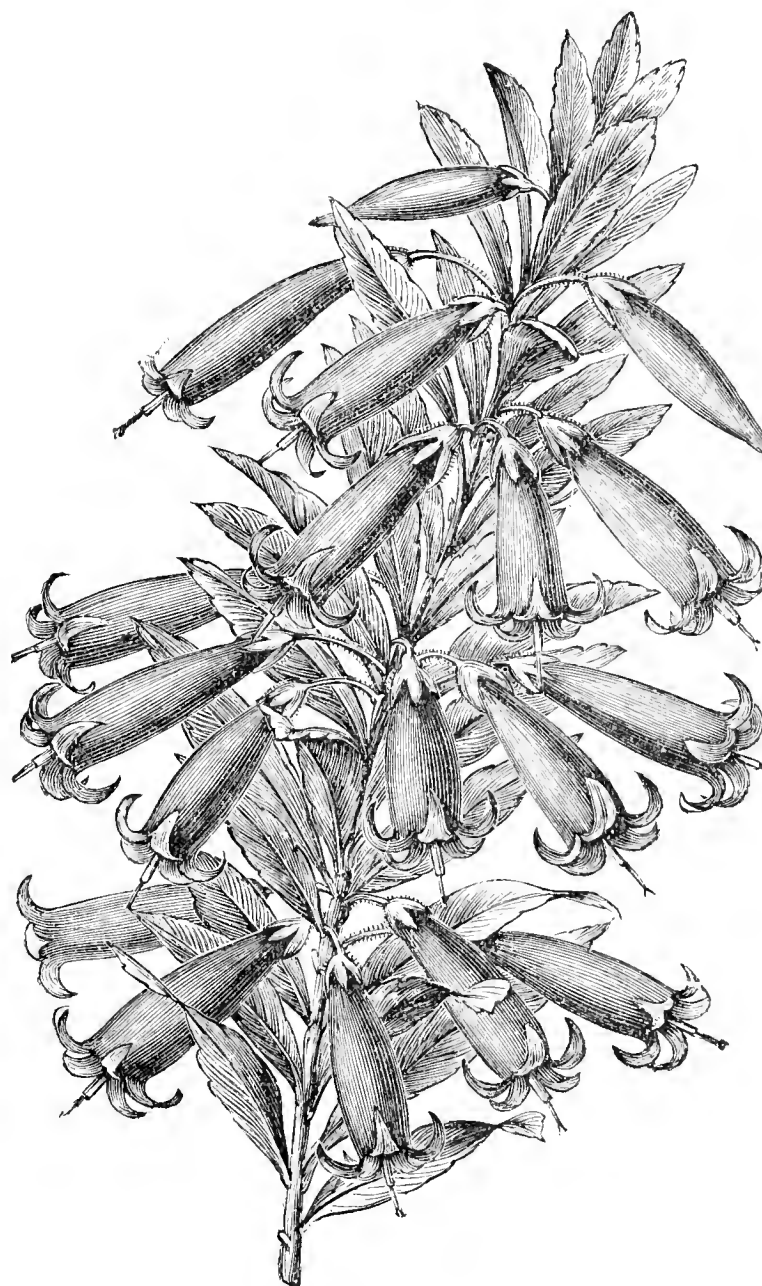


FIG. 49.—AGAPETES BUXIFOLIA.

J. Wilson Potter, J. T. Gabriel, H. J. Chapman, W. H. Young, H. Little, H. Ballantine, de B. Crawshay, C. J. Lucas, R. B. White, J. Colman, W. H. White, and T. B. Haywood.

The collections of Orchids sent by various growers of repute were of exceptional beauty and interest. Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, contributed a bright and diversified group. The plants were well flowered and effectively arranged. *Dendrobiums* were splendid, and included a fine specimen of *atroviolaceum*, with *Euosmum delicatum*, *Euryalus*, *Cybele elegans*, *rubens grandiflora*, *splendidissimum*, *Wardiano-japonicum*, *nobile*, *Ainsworthi*, *intertextum*, and *splendidissimum grandiflorum*. There were also *Laelia* Mrs. M. Gratrix rosea, *Cypripedium Lathamianum*, *C. calypso*, *Phalaenopsis* Mrs. J. H. Veitch, *Laelia glauca*, *Lycaste costata*, *Sophrolaelia laeta superba*, *Phaio-Calanthe Niobe*, *Epidendrum elegantulum*, and two magnificent varieties of *Laelio-Cattleya callistoglossa* named respectively *superba* and *splendens* (silver Flora medal).

The backbone of the exhibit from Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart, Burford Lodge, Dorking, was found in the beautiful collection of *Dendrobiums*, which comprised *melanodiscus*, *Johnsonianum*, *specio-Kingianum*, *barbatulum puniceum*, *Hilli*, *Clio Burford variety*, *The Pearl*, *Wiganæ xanthochilon*, *nobile*, *Burford variety*, *melanodiscus Dido*, *Treacherianum*, *splendidissimum*, *Dominanum*, *pallens*, *Juno*, *burfordiense*, *chrysodiscus*, and *Luna*. Mr. White sent also a basket of *Cypripedium hirsuto* Sallieri as illus-

trative of the several varieties from the same seedpod; *C. Alice*, *Argo-Morganæ*, insigne seedling, *Chamberlaino-insigne*, *Rothschildo-superbiens*, and *Lebudyannum*, with *Calanthes Ariadne* and *gigas*, *Cochlioda vulcanicum maximum*, *Habenaria bonatea*, several *Masdevallias*, and *Phalenopsis Schilleriana* and *Stuartiana* (silver-gilt Flora medal).

Messrs. B. S. Williams & Son, Upper Holloway, were represented by a small group of Orchids, which had as a centrepiece a grandly flowered example of *Cœlogyne cristata*. *Cymbidium eburneum* was also included, as were *Cypripediums Pitcherianum* Williams' variety, *Boxalli nigrum*, *Euryandrum politum*, *callosum*, *Rothschildianum*, *cœnanthum superbum*, *Lebudyannum villosum*, *Harrisonianum superbum*, *Winnianum*, and *discolor*, with *Playtyclinis glumaceum valida*. Mr. F. W. Thoroughgood, gardener to H. T. Pitt, Esq., Stamford Hill, staged a varied group of Orchids, in which *Dendrobiums*, *Cypripediums*, and *Odontoglossums* were well represented (silver-gilt Flora medal).

Messrs. H. Low & Co., Bush Hill Park, had about a dozen Orchids, including a beautiful variety of *Dendrobium Wardianum*, *D. Brymerianum*, *Cypripedium Charles Richman*, a splendid plant of *Cattleya Trianae alba*, with an example of the typical *C. Trianae*. Messrs. F. Sander & Co., St. Albans, showed *Epidendrum Orphanum*, *Epiphronitis Veitchi*, with several hybrid *Phaius*. Welbore S. Ellis, Esq., Dorking, exhibited some beautiful plants of *Odontoglossums*, with *Cœlogyne cristata alba*, *Dendrobium Lindleyanum*, *Lycaste Skinneri*, and others (silver Banksian medal).

Messrs. J. Cypher & Co., Cheltenham, are too seldom represented at the London shows. On the present occasion they sent *Dendrobiums nobile nobilius*, *Ethel*, *atro-violaceum*, *Cassiope*, *Cybele*, *Ainsworthi* Cypher's variety, *Endocharis splendidissimum*, and *nobile Cooksonianum*, with *Sophranitis grandiflora*, *Miltonia Reezli*, and others (silver Banksian medal). Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, Staffs, sent a splendid collection of *Odontoglossums*, including *sceptrum grandiflorum*, *excellens nobilior*, *e. spectabile*, *Adrianæ Lady Roberts*, *A. rubiginosum*, *A. Lord Roberts*, *crispum* (?) *Golden Gem*, *Wilkeanum concinnum*, *Loochrystiense Kimberley* (silver Flora medal).

Of smaller exhibits Messrs. Charlesworth & Co., Heaton, sent *Epilaelia heatonense*; A. H. Smee, Esq., Carshalton, three varieties of *Cattleya Trianae*; de Barri Crawshay, Esq., Sevenoaks, *Laelia Jongheana* and *L. anceps Dawsoni rosefieldensis*; S. J. Lutwyche, Esq., Beckenham, a seedling *Dendrobium* and *Cypripedium beechense*; T. B. Haywood, Esq., Reigate, a magnificent plant of *Dendrobium splendidissimum grandiflorum* and *D. Virgil*; Baron Schröder, The Dell, Egham, *Laelia Jongheana*; R. I. Measures, Esq., Camberwell, *Cypripedium villosum aureane superbum*; J. Leeman, Esq., Heaton, *Dendrobium nobile virgale* and *Cattleya Trianae West Bank House* variety; Messrs. F. Sander & Co., *Selenipedium Titanum* and *Laelia Jongheana*; G. S. Ball, Esq., Wilmslow, *Zygopetalum Balli*; Col. Shipway, Chiswick, *Cymbidium Traceyanum*; and Lord Rothschild, Tring, *Schomburgkia* species.

CERTIFICATES AND AWARDS OF MERIT.

Agapetes buxifolia (J. Downes).—A very old plant than is comparatively well known (award of merit). (See fig. 49.)

Apple Gubalou (A. Pettigrew).—A handsome variety with indistinct angles. The flesh is firm and very sweet, and is suitable either for dessert or culinary purposes. The deeply set eye is half open, and with reflexing segments. The stalk is very short, and deeply inserted in a round cavity. The skin is yellow, profusely spotted, and dull on the sun side (award of merit).

Camellia General Hector Macdonald (F. Sander & Co.).—A large flowered semi-double variety of a rosy red colour (award of merit).

Cattleya Trianae West Bank House variety (J. Leeman).—A handsome variety, with petals and sepals of soft rose. The lip is crimson on the front lobe with a deep yellow throat (award of merit).

Iris stenophylla (R. Wallace & Co.).—A dwarf-growing singularly beautiful species. The standards are slate blue and the falls deep velvety blue (first-class certificate).

Laelia Edissa (J. Veitch & Sons).—This is from a cross between *L. purpurata* and *L. anceps*. The sepals and petals are soft rose purple, and the lip is rich crimson with a paler edge and a handsome throat (first-class certificate).

Odontoglossum Adrianæ Lord Roberts (W. Stevens).—A beautifully formed flower. The prevailing colour is yellow tinged with green, and there are numerous bright brown blotches and spots. The lip is of a paler shade (award of merit).

Odontoglossum Loochrystiense Kimberley (W. Stevens).—A very beautiful variety, with a general ground colour of soft yellow and small and large brown spots (award of merit).

Primula kewensis (Royal Gardens, Kew).—This is a cross from *floribunda* and *verticillata*, and is extremely floriferous. The flowers are bright yellow (first-class certificate).

Zygopetalum Balli (G. S. Ball).—This is a new species. The sepals are rose carmine with a white base and margins; the petals are of a similar shade, but the colour is not in one mass, but is divided into spots towards the tips. The central portion of the lip deep crimson with a very broad pure white margin (award of merit).

FLOWERING PLANTS FROM SEED.

PENTSTEMONS.

THE Pentstemon is an herbaceous perennial of an attractive character when in bloom, and well suited for growing in a border of choice perennials. Though a perennial it will flower the first season from seed, and it is owing to this fact that it has become more popular as a summer bedding plant. To obtain strong healthy plants which will bloom creditably the first season, it is essential that the seeds be sown early. Though March is rather late to raise from seeds so that flowering plants may be obtained the same season, with a little extra attention in encouraging growth in a moist heat, and plenty of light, so that they may be transplanted early into boxes, good stock will be forthcoming by the end of May. A pan or pot will accommodate sufficient seedlings to fill several boxes when pricked out.

A light compost of loam, leaf soil, and sand should be prepared. Make the surface smooth and fine, moisten, and sow the seeds not too thickly, covering with a thin layer of fine soil. Shade with damp moss or paper until germination ensues, which will soon take place in a temperature of 60°. Accord the seedlings a light position, maintaining the soil moist, and growth will advance rapidly. The next operation must be to transfer the seedlings to boxes. Continue them in the same temperature so as to encourage growth becoming free, then gradually inure to cooler conditions. Plant finally in well dug beds in an open position at the end of May. They will bloom well in early autumn. The details for raising Pentstemons are also applicable to *Petunias*, *Gaillardias*, *Stocks*, *Asters*, *Phlox Drummondii*, *Salpiglossis*, *Scabious* for a summer display, and to *Pansies* and *Violas* for autumn flowering.

SWEET PEAS.

In order to obtain an early display of bloom a number of 4 or 5-inch pots may be three-parts filled with soil of a rich character and five or six seeds sown in each. When the seeds have germinated afford a light position on a shelf for the pots, a cool or only slightly heated structure with a free circulation of air being the best. A garden frame is an admirable place for them when growing, and if not heated cover the glass on cold nights to avoid a check. On every favourable occasion expose fully so that the plants will be thoroughly hardened for planting out in rows late in April. When thus planted affix the sticks down each side, which will render both support and protection. These early rows will afford the first flowers. Successional rows may follow, but the seeds must be sown directly in the position. Stake them early when through the soil with branched sticks. All the choice named varieties had better have the pot treatment, as it is certain to insure good plants, and is economical in seeds. Sweet Peas should this year have special attention given them, as more than ordinary interest will be attached to the flower, seeing that the present year marks the bi-centenary of its introduction.

STOCKS.

Stocks are capable of producing a long succession of flowers, and are showy and fragrant. The season may be commenced by sowing the Ten-weeks varieties, which will come into flower first, the succession being maintained by the Intermediate and Emperor varieties. Ten-weeks Stocks may be sown now, the others three weeks later. Drain some pans, pots, or shallow boxes. Save the rougher parts of the compost to place over the crocks. The soil should consist of loam, leaf soil, and sand, and it is a good plan to practically roast the compost before using in order to destroy insect or fungoid life. The latter often causes trouble when the seedlings are young by taking possession of the tender stems and causing the plants to collapse. The soil, if dried by heating, must afterwards be brought to a moist condition by sprinkling with water and well mixing. Place it in the pans or pots moderately firm and give a gentle watering. When drained sow the seeds, covering lightly with fine compost; they will germinate readily in a temperature of 55° to 60°.

On the appearance of the seedlings place the pans or pots in a lighter position, taking special care not to under or overwater them until the stems become harder, which is encouraged by air and light. This condition being insured, and the plants large enough, prick them out 2 inches apart in boxes. Keep the drainage holes open by crocks laid upon them, and a few between. On these spread a layer of flaky manure, filling with a compost consisting of loam, leaf soil, manure, and sand. Shake the whole firmly down, and prick out the seedlings. Insert the roots straight down in the holes, which ought to be made sufficiently deep for this purpose, and press the soil well round them. Water sparingly at first, but encourage growth in a warm, moist temperature, transferring the plants when established to cooler quarters; slow, steady growth being preferable to rapid advances. Before the plants become too large remove them to a cold frame where they will always receive plenty of light and air freely, and on favourable occasions full exposure during the day, but afford protection at night until safety from frost is past, which will be the end of May. At this time transfer to the flowering positions in good soil of fair depth. Cut the plants out of the boxes with squares of roots and soil attached, sinking them to the lowest leaves.—E. D. S.

[For the excellent illustration of Stock Princess Alice (fig. 50) we are indebted to the courtesy of Messrs. J. Veitch & Sons, Chelsea.]

THE WANDERINGS OF MR. PETER BARR, V.H.M.

(Continued from page 112.)

I VISITED the Falls of Niagara, and I spent two days with Mr. Cameron, who is in charge of Queen Victoria Park on the Canadian side—a fine man and a good botanist. The Falls are shrinking, though some deny it; but I think, with Mr. Cameron, the river will never be as full as it used to be, except when there are floods. The reckless cutting of timber all over the States and Canada has decreased the volume of water in the great rivers and lakes. At Milwaukee I met a Mr. Dunlop, who has been there since early in the forties—a fine old Scotsman, who was a friend of Loudon's, and in conjunction with him laid out a famous garden at Streatham—I forget the name at the moment. Mr. Dunlop confirmed the lowering of the great lakes.

Then I went to Rochester, and called upon Elwanger & Barry. Mr. Barry took me to the parks. I there met John Dunbar, the Assistant Superintendent—a most exceptional man. Being surprised at his work, I asked him where he came from. He had been, amongst other places, at John Laing's, Forest Hill; and was three years under Falconer, when he was at a great man's place near New York. I next went to Albany. Here I found a most remarkable statue to Robert Burns, the Scottish poet, unlike anything of him that has yet appeared. Thence I returned to New York. I was nearly four months on this tour. I then went to Burlington, Vermont, to see what was being done in agriculture, but the ground was frozen hard, so I looked over the indoor work. At Charlotte, Vermont, I met Mr. Pringle, the Mexican botanist, at his cousin's house, Mr. Horsford, of Tomato fame. Journeyed on to Montreal, Quebec, and Ottawa. Here the Government put a sleigh at my service, and I made two visits to the Experimental Farm, where good work is being done.

After Ottawa I spent a month with a cousin, eighty years of age. With an uncle and aunt, and some seven or eight children, he went to Canada fifty-six years ago, so that Paul's and Barr's literally inherit the land. I was never amongst so many Barr's before. Then to Toronto. This is a perfect city, with fine parks, that want more money spending on them. Hamilton is a nice place; London is lovely; Windsor, where John Barr, the writer, came from, is dirty. After calling at Detroit and Chicago, I had four or five days on the train to California.

Visiting places on the way I landed at St. Barbara, and in company with Mr. Dreer, of Philadelphia, spent some days in the private and public gardens. I then took steamer to San Francisco; and passed on to see Carl Parry, at Ukiah, the centre for collected Californian bulbs. After that to Santa Rosa, to see Mr. Burbank, the wizard hybridiser. To reckon up the value of this man's work would mean six months at Santa Rosa. All America have their eyes upon him, and he is doing a great trade in the sale of grafts, which he sells by the foot. He has a nurse tree, on which are 500 grafts. He sows the seed in spring, grafts in winter, and in three seasons he knows his results. I wanted him to carry his knowledge to the Chiswick Conference, but this he could not manage. Then I said, send a paper; and this he promised to do. We visited the seed grounds of Moss and the Californian Nursery Co., at Santa Clara. In California I found the country white with Prune blossom for miles and miles, and still the planting goes on. Once they can cure the Prunes as well as the French the industry in this will be great, and affect the French market.

After this I took shipping on the good ss. "China," March 24th, for Yokohama, via Honolulu. At this last place I spent one day at the museum and the Government gardens, presided over by a Scotsman, reaching Japan 12th April, in time to see the tail end of the Cherry blossom feast. In February the Plum blossom is on; in March and April the Cherry blossom. These are the great spring feasts in Japan.

Nurseries are spread all over Japan, but the two principal are in Yokohama. Boehmer & Co., a European nursery, run by a German, Mr. Ungar; the other a very extensive one, the Japanese Yokohama

Nursery Co. I work between these, as the two are each willing to give me every kind of information I desire. I have been several times to Tokyo and other places. One tour I made to Kobe, calling at Nagoya, a great centre for China goods (porcelain); Osaka, the centre for tree Pæonies, where I described sixty sorts for the Yokohama Nursery Co.; and Kyoto, a great place for ancient Bhudda temples. Nara was once great in temples, but not so much so now. There is the great bronze image of Darbutsu, 53 feet high, in a sitting posture, dating back to 747, when the casting began. Hundreds of tame deer roam about, and take bread from the hands of visitors. Paid to see the sacred dance at one of the temples; and then returned to Yokohama in time to see the spring races, the Emperor being there, who for the first time, at the invitation of the foreign community, drove through the European settlement—a great occasion. The Emperor is a divinity, descending from the sun's eye, and no one head must be higher than the Emperor's, and no peeping Tons allowed; window blinds had to be drawn down, and we had all to stand on the level of the tire of the carriage wheel.

I went north 800 miles to the island of Yego to the capital Sapparo and saw the ancient race of Japan, the Ainu, now fast dying out. In

my northern tour I saw some of the wild Lilies, and all along the railway sometimes whole fields of the species *Iris Kämpferi*. It is said that over a century ago this *Iris* became a favourite with amateurs, and has been cultivated ever since. Now that the Damios, who were the great patrons of horticulture, have been abolished, the flower has gone into interested parties' hands. Thus in Tokyo there are three large collections, and while the plants are in flower the people flock to these places, which for the time are turned into tea gardens, and these visitors drink tea or sake, make poetry on the flowers, and enjoy themselves. Sometimes private theatricals are held; like the Cherry blossom festival, a time of pleasure, but mostly amongst the better class. The Cherry blossom time is a notable occasion with all classes, and a great time to drink sake. A marriage in Japan is celebrated over three cups of sake; the man drinks three cups and the woman three cups in the presence of the members of each family, and the knot is tied.

The culture of dwarfed trees has been a great art for hundreds of years. There is one at the Yokohama nursery of which they have data for 400 years, and they suppose it may be 500 years old. Most of those trees go to America and are killed, so I have drawn up directions how to manage them for the Yokohama Nursery Co., and shall suggest they send one to each of the American

and English newspapers. (See page 492 last vol.). *Lilium rubellum* is a valuable Lily for market men, three to be put in a 5-inch pot.

Here, as in America and Canada, I have met with every attention and kindness. I have sent many Japanese books and pictures to my daughter Agnes, the artist. Somewhere within three weeks I will close up here and move on to China. I may mention I have prepared descriptions for about three hundred varieties of *Iris Kämpferi*, and will prepare cultural directions, as it is a pity that people so often fail with it. The Japs manure both *Iris* and Lilies when they are working at the roots, but not when the top appears above ground. They grow the *Iris* in the Rice fields, and all the time they are growing they are in water. When done flowering the water is drained off. In England they should be grown in beds that can be soaked with water once a week or oftener while growing, and after flowering less water, and about August no more water. The Japs use liquid manure.

The Bermuda Lily not being equal to the demand, a New York syndicate started the industry in Japan. This year about four millions will go to America and Europe, mostly New York and London. The roots, when the demand was made, were collected from the southern islands, and are represented by some six or more varieties, and as the Americans depend upon having the flowers by Easter, for general convenience I have been pressing home upon the Yokohama Nursery Co. the importance of getting rid of all but two sorts. Thus you see I am leaving my impress on Japan in a quiet sort of way.

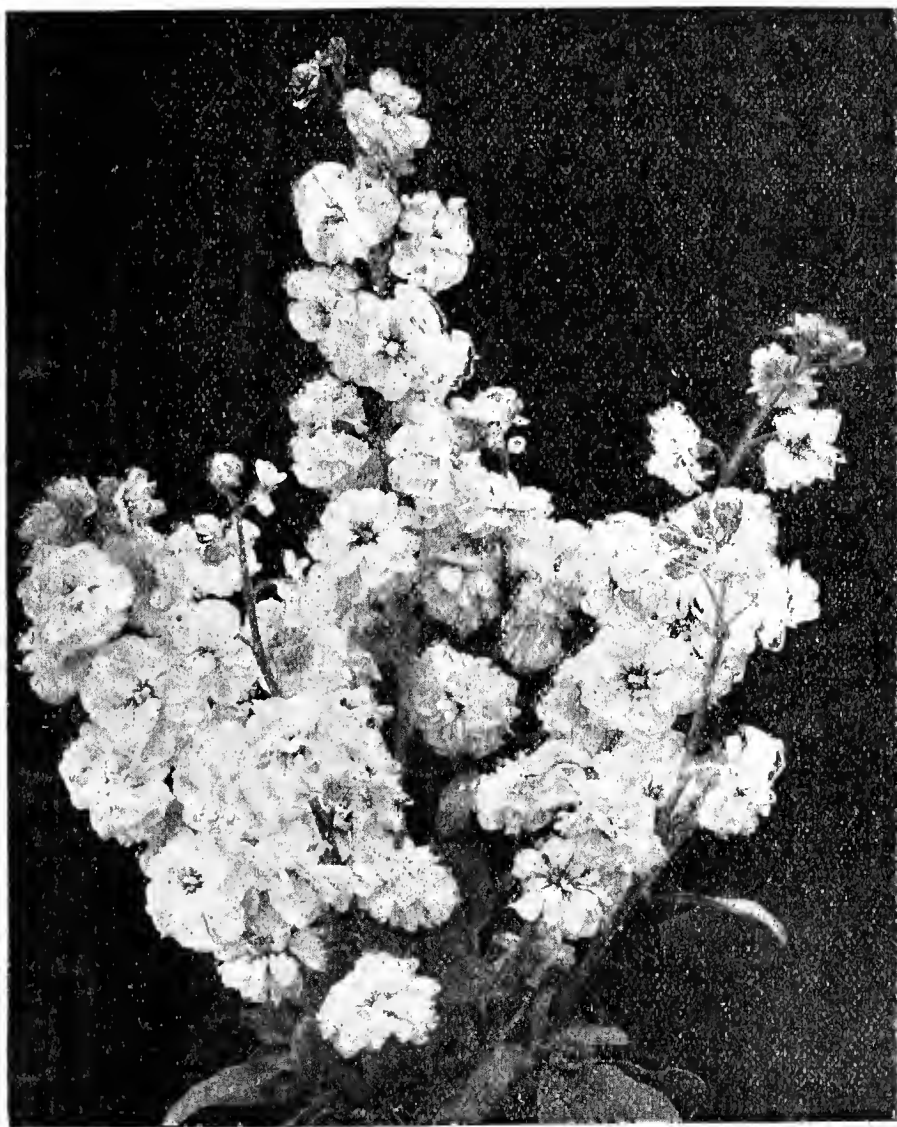


FIG. 50.—STOCK PRINCESS ALICE.

THE YOUNG GARDENERS' DOMAIN.

PRIMULA SINENSIS.

I THINK Chinese Primulas rank among the most popular and serviceable of winter flowering plants; the variety of colours claims for them general admiration, and it would be difficult to find a substitute for the embellishment of the conservatory at the dull season of the year. If the atmosphere about them is kept dry they continue in bloom for a great length of time. The disadvantage with the singles is they are of little use in a cut state, while the doubles are of unquestioned value.

Where an extended display of flower is required sowings at intervals from February to May should be made, but for ordinary purposes I think the first week in March a good time to commence. A compost of yellow loam and leaf mould in equal parts, with a fair proportion of silver sand, I find good for this purpose. The whole should be thoroughly incorporated and sifted through a moderately fine sieve. Clean, well drained pans or pots may be used, and should be filled to within an inch of the top with the soil. It is a good plan to sprinkle a little sand over the surface and give a good watering prior to sowing. The seeds should be sown as thinly and evenly as possible, after which cover lightly with fine soil, and place a piece of shaded glass over the whole. On a shelf in a greenhouse, where there is a temperature of about 55° to 60° is a good place to stand the receptacles till germination has taken place.

As soon as the seedlings appear gradually inure them to more light and air by raising the cover glass until it can be removed altogether, but a little shade will be found necessary for a time on bright days. When they have developed the third leaf, or can be handled without injury, prick them off into small thumb pots, and replace on the shelf as near the glass as possible. In a few weeks they will be ready for another shift, which should be into 60's. The compost this time need not be sifted, and a rather smaller proportion of sand should be used. A cold frame where the greatest possible amount of light and air can be admitted should be chosen for them after this potting.

When the roots are through the soil their final shift into 48-pots should be given. I consider this size quite large enough. After returning them to the cold frame keep close for two or three days, when root action will have recommenced. The plants should never be potted if the ball of soil, and that to be used, is dry. Firm potting is always necessary for sturdy growths, which is conducive to a grand display of bloom. The flowers should be kept picked off till about the first week in October; the plants will then bloom throughout the winter.—ASPIRANT.

EARLY STRAWBERRIES. (Continued from page 146).

TURNING to the forcing of these plants, shelves erected in Peach houses and vineries are very suitable places, but they should be as near the glass as possible, and not too close to the ventilators, where cold draughts direct on to the plants would be liable to cause a severe check. To maintain a succession of fruits, a hotbed ought to have been made consisting of litter and leaves, in which a number of pots should always be plunged, as then, when one stock has done its work there will be others to follow.

To obtain ripe fruits by the end of February and the beginning of March the plants should be placed in an early vinery about the middle of November, which temperature will be found suitable until the fruits are swelling; then they will require a higher temperature to have them ripe at the time stated. When the plants are taken in the pots should be washed and the drainage examined, as if the latter is not in proper condition the soil may become sodden and sour. Attend to the syringing of the plants mornings and afternoons when the weather is bright to keep pests in check, but this should always be done in time to have the foliage dry at night. When the plants are in flower they will require a drier atmosphere; it will be necessary to brush the blooms daily with a camel's-hair brush or a rabbit's tail about midday to distribute the pollen and to insure a better crop. This is an operation that must be carried out with extreme care, and will be found by young men extremely interesting work.

After the fruits are set they will require thinning, leaving about five fruits on each of the earliest plants, and seven to nine on the later ones. They will now require abundance of water, never allowing the plants to become thoroughly dry; if so they are liable to get red spider, and poor results will ensue; liquid manure should be given once daily. Strawberries in pots are very subject to mildew, and they should be examined carefully at intervals, and if any signs of it appear dust a little flowers of sulphur on the affected parts before the enemy reaches the fruit.

When the fruits are swelling the plants ought to be removed to a temperature of 65° to 70° at night, that is for the early ones. As the fruits show signs of colour discontinue the use of liquid manure and the syringe, and admit a little air at nights if the weather is favourable. When the fruits are about ripe remove the plants to a cooler house that has a temperature of about 55° with plenty of air, as the fruits will keep much longer and be of superior flavour. The varieties to force I will leave for the growers to decide, as there are several to choose from, but my opinion is that Royal Sovereign is one of the best for this purpose.—P. R.



HARDY FRUIT GARDEN.

Spring Planting Strawberries.—Strawberries may be established in spring, though not with the intention of fruiting them the same season, unless the plants can be so moved and planted that the roots are not disturbed in the process. As a rule, however, spring planting does not lend itself to securing a crop the season immediately following, and it is best not to allow the plants to fruit. They may be encouraged to develop the flower stems sufficiently far so that it is known the plants are fruitful in character, but to bear a crop the first season weakens them considerably, for the energies of the plants are devoted to maturing the fruit, whereas they should be directed to building up strong crowns for the succeeding season.

Preparation of the Soil.—A good depth of loamy soil in an open aspect is the most suitable position for Strawberries. Thorough preparation of the ground must be made, either now or previously in the autumn, and the liberal addition of manure of a well-decayed character. In working the land it is desirable to keep the best soil at the surface and the subsoil in its original position. Heavy soil requires lightening by incorporating with it wood ashes and gritty material, which tend to keep it open, while very light soils are improved by the addition of pulverised clay or marl. Also, recently prepared light soils must be well firmed before planting is done. Compression tends to keep in the moisture, and Strawberries root better in firm soil.

Planting.—The planting should be carried out when the weather is favourable and the surface soil dry. As a general rule, the distance between the rows will be 2 feet, placing the plants in the rows 18 inches asunder. Some of the strongest growing varieties may be planted in rows 30 inches apart, the plants 20 inches asunder, but for the majority the former distances are ample. Plants that can be lifted from nursery beds in the same garden or within easy access move with plenty of roots and soil attached and soon become established. Stock, however, which is purchased may have a fair amount of roots, but no soil is adhering, hence more care is necessary in planting. Keep the fibres as fresh as possible, protecting them from sun and air. Should they have become very dry they ought to be thoroughly wetted and plumped up in water previous to planting. The method of planting these should be first to draw a drill, and in the drill form small mounds of soil on which place the plants, spreading out the roots equally, and cover them with fine mould spread carefully upon the fibres from the crown outwards, the latter being level with the surface of the ground. Make the soil firm around the roots.

Varieties.—Strawberries for early crops may consist of Royal Sovereign, Laxton's No. 1, Scarlet Queen, Noble, Vicomtesse Hericart de Thury, and King of the Earlies. Midseason varieties comprise President, Sir J. Paxton, Newton Seedling, Leader, and Monarch. The latest varieties include Elton Pine, Latest of All, Frogmore Late Pine, Jubilee, and Waterloo.

Treatment During Summer.—Frequent attention must be given to the plants during the spring and summer although they are not fruiting. In the first place it is very important to maintain the surface about the plants loose with the Dutch hoe, especially during the prevalence of dry weather. This not only promotes growth but prevents rapid evaporation of moisture from the soil, and keeps down weeds. Runners must also be cut away as fast as they appear, and water will be required during exceptionally dry periods. A light mulching of littery manure during the hottest weather is beneficial, but rich manure is not needed the first season.

Established Strawberries.—*Weeding and Cleaning.*—The remains of the autumn manuring should be raked off and strong weeds forked out. Cut off dead and withered foliage, and hoe between the rows to destroy seedling weeds.

Spring Mulching.—A dressing of moderately fresh manure may be spread between the rows of fruiting plants. As this contains both strawy material and solid manure the latter affords nutriment which will wash into the soil for the plants' benefit, while the strawy matter, becoming bleached and clean by exposure, affords a bed for the ripening fruit later on.

Pruning Cob Nuts and Filberts.—The pruning of Nut bushes is best carried out when the catkins or staminate flowers have shed their pollen, the pistillate blooms being fully open when the pollen began to disperse. The catkin-bearing shoots, when fertilisation has been effected, are not required to remain at full length, hence may be shortened closely back. Wood that bears neither catkins nor pistillate flowers is of an unfruitful character, and may be shortened also, but if sappy and strong remove it entirely. Retain twiggy shoots, these bearing blossom buds at their points. The last year's bearing shoots must be pruned to within half an inch of their base. Thin out crowded spur growths. Where catkins are scarce procure some from any Nut

trees, and hang them among the branches. Remove suckers springing from round the bushes. If more bushes are required to be established plant compact suckers about 2 feet high.

Wall Trees.—Finish the pruning and nailing of all trees upon walls, endeavouring if possible to afford ample room for the branches by removing crowded ones, even if those remaining are situated at greater distances than absolutely essential. It is better that they should be thinly placed than overcrowded. Rank growth of spurs or clumps of spurs is another evil which to some extent may be rectified by the bold removal of every other clump. It is not advisable to practise too much pruning at one operation, but to proceed gradually where cases call for more than ordinary treatment. The removal of old inert soil from over the roots will in some cases be advisable, substituting fresh compost.

FRUIT FORCING.

Cherry House.—Ventilation is an important factor in the cultivation of Cherries under glass. A free circulation of air should pass through the house wherever the temperature exceeds 50°, the amount of air being regulated by the conditions of the external atmosphere. Employ fire heat only to prevent the temperature falling below 50° in the daytime, and to maintain a night temperature of 40° to 45° in the house when the trees are in flower. Attend to fertilising the blossoms. Fumigation must not be resorted to whilst the trees are in flower, but will be necessary as soon as the fruit is set. It is also requisite to watch closely for the appearance of grubs, one kind rolling itself up in the leaves, and can be eradicated by squeezing; but the other encases itself in a sort of web on the under side of the leaves, giving them a scorched appearance, and from these it passes to the clusters of fruit, perforating and destroying them. The only means of extirpation is to examine the trees occasionally and destroy the caterpillars.

Peaches and Nectarines.—*Earliest Forced House.*—The fruit has nearly completed the first swelling, and will soon enter on the stoning process. If the thinning has been properly attended to there will be about one fruit of the larger Peaches to every square foot of trellis covered by the trees. Nectarines and Peaches not of the first size may be left a little closer. There is danger, however, of the fruit falling if too many are left, but this depends greatly on the wood being well ripened and the otherwise healthy condition of the trees. If there be more fruit than specified above remove the smaller. During the stoning process keep the temperature as equable as possible, as a sudden check by draughts of cold air in the daytime and too high a temperature at night may prove disastrous. The night temperature may range from 60° to 65°, but 5° less will be safe in severe weather; 70° to 75° by day with sun heat, and about 65° by artificial means when the atmosphere is cold and the sky overcast. Secure the shoots to the trellis as they advance, keeping those retained to attract the sap to the fruit stopped at the second or third joint. Keep red spider in check by syringing in the morning and afternoon of fine days. If thrips and brown aphides appear fumigate carefully when the foliage is quite dry. For destroying the insects named there are a number of advertised insecticides, all suitable for their respective applications. Afford due supplies of water to inside borders, or if the trees are at all weak liquid manure in a properly diluted and warmed condition.

Second Early Forced House.—Disbud gradually, removing the ill-placed and unnecessary shoots, not reserving too many of the best situated and most desirable, and tie down the growths early, so as to give them the desired inclination, allowing sufficient room for swelling in the ligatures. Thin the fruit by degrees, first removing those on the under side of the branches or otherwise badly placed, but leave those in the best positions for receiving light and air until they indicate by free swelling the need for further reduction, then remove the smaller, and so on until only a few more than are required for the crop are left. Syringe the trees on fine mornings, and ventilate early in favourable weather. The temperature may range from 55° to 60° at night, 60° to 65° by day, ventilating at the latter temperature, and closing the house when the heat is declining, allowing an advance of 5° to 10° from sun heat. Supply water as required, but avoid making the soil very wet at this early stage, for it only induces soft growths.

Houses Started in February.—Trees started early in the month are now in flower. As in many cases there will be more flowers than needed, all those on the under side of the shoots may be removed by drawing the hand the reverse way of the growths, and where the blossoms are closely set they may be still further reduced, especially on the weaker shoots. A night temperature of 50° to 55°, and 55° by day artificially, is suitable, falling 5° on cold nights, ventilating from 50°, as a close atmosphere is fatal to the blossoms, freely at 55°, and allow an advance to 65° from sun heat. Fertilise the flowers in the early part of fine days, either by shaking the trellis or dusting the blossoms with a camel's-hair brush charged with pollen. It is the better plan to pay attention to each individual flower when its pollen is ripe. Cease syringing when the trees are in flower, but the floor and border should be sprinkled morning and afternoon.

Houses to Afford Ripe Fruit in July and August.—These must now be closed, syringing occasionally until the buds show colour, when it should be discontinued. The borders must be brought into a thoroughly moist state by repeated waterings if necessary, supplying liquid manure to weak trees. If the lights have been off during the winter the borders will not require watering until the fruit is set and advanced in swelling.

When the buds are sufficiently advanced, and when there is a superabundance of promise for fruit, all those on the under or back of the shoots may be removed, which will strengthen those that remain and conduce to a good set of fruit. Maintain a temperature of 40° to 45° at night, 50° by day, with a little air, advancing to 65° with sun and full ventilation.

Strawberries in Pots.—The earliest plants are ripening their fruit, and when it changes colour a drier and more freely ventilated atmosphere is desirable, but there must be no sudden change. The temperature for inducing the fruit to swell should be 60° to 65° at night, and 70° to 75° by day, advancing to 85° or more from sun heat. Plants in vineries and Peach houses which are started periodically will afford successional supplies of fruit, there being no need to move the plants except to meet special requirements. Introduce plants to the shelves of late fruit houses, which suit the late forcing varieties.

THE BEE-KEEPER.

CREATING A DEMAND FOR HONEY.

BEE-KEEPERS have sometimes a difficulty in finding a market for their produce, as the competition is much keener than it was a few years ago. Producers, however, have often themselves to blame for this state of affairs. The chief cause is disposing of the produce early in the season at a low price, instead of holding it until a demand arises. Neglect in grading the different samples, and carelessness in the small details of management, the wood of the sections being discoloured with propolis, are also factors towards this undesirable end, while using bottles and jars without any attempt at neatness or uniformity is also an error.

These are a few of the causes why bee-keepers sometimes find their produce a drug in the market. No opportunity should be lost in endeavouring to create a demand for honey. There are several ways in which this may be done. For example, making it known locally that genuine honey may be obtained in the district. This and placing it in suitable packages will usually have the desired effect. Care should be taken that only honey of good quality is offered in this manner; there must be no cause of complaint, and customers will return. It is surprising the quantity that may be disposed of by working on these lines.

We have been induced to make these remarks owing to the complaints sometimes heard from bee-keepers who will not take reasonable trouble to place their produce before the public in the best possible manner. Quite recently we saw some sections of honey which had been sold to a provincial dealer at a cheap rate; some were unsatisfactory, whereas others were really first-class. The wood of many of them was much discoloured, as no attempt had been made to clean it, which would have improved their appearance; nor had they been graded. Had this been done it would have been better for the producer, the retailer, and the consumer. The former would have obtained a better price, the retailer would doubtless have done more trade, and the consumer would be more likely to buy extensively.

TREATMENT OF HONEY.

The manipulation of run honey requires some attention if the best results are to be obtained. Grading the various samples is even more important than when handling comb honey. We have known bee-keepers mix dark and light honey together with the intention of making a good sample. This is a plan not to be recommended, as the result is invariably an inferior sample.

During a favourable season when the honey is obtained from various sources it is not often that any two samples are exactly alike. The honey from field Bees is brown, and should be kept separate from the honey of lighter colour. We prefer to keep a sample of each until the bulk is disposed of. It can then be examined at any time with the knowledge that the stock remaining will be of the same quality. Ripe honey will granulate, and it is interesting to observe that retailers now realise that this is a mark of genuineness. Heat in some form or the other is necessary if it is required to keep the honey in a liquid condition. We have sometimes placed the glass jars of honey in the sun for a few hours, which had the desired effect. The simplest plan, however, is to place the vessel containing the honey in hot water until the whole is dissolved.

If properly treated it will not granulate, and will keep in good condition as long as required. We do not recommend unripe honey to be treated in this manner; although some bee-keepers who are more anxious for quantity than quality extract the honey from the combs before it is ripe. They then endeavour to improve on nature by ripening it artificially by using heat and allowing the moisture to evaporate. This is not a success, and has done much harm to bee-keeping in this country.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Hogg & Robertson, Dublin.—*Book of the Farm.*

H. P. Kelsey, Highlands Nursery, Boston, Mass.—*American Hardy Plants.*

Little & Ballantyne, Carlisle.—*Farm Seeds.*

J. R. Pearson & Sons, Chilwell, Notts.—*New Zonal Pelargoniums.*

Toogood & Sons, Southampton.—*Farm Seeds.*



TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Violets Diseased (J. W.).—The leaves are infested by the Violet mould, *Peronospora Viola*, which has been rather prevalent this season. The fungus mostly attacks plants in frames, and is certainly favoured by a cold and moist atmosphere. The only thing now likely to be of any use is to dust the plants with air-slaked lime after removing the worst infested and withered leaves. This is more effective than wood ashes, which, however, are excellent. Owing to the plants having been kept safe from frost, the atmosphere would become more or less stagnant, and the plants be correspondingly weakened. A free circulation of air greatly tends to render the plants more disease resistant, and also has a deterrent effect on the fungus. Your experience with the few plants in a broken frame that have been frozen hard is very suggestive of the importance of air, they being in good condition and the leaves perfect.

Repotting Camellias (W. G. B.).—Pot them at the beginning of April into pots a size larger; do not give a large shift. Drain the pots to one-third their depth, and place over the drainage the rougher parts of the compost. Prepare a compost of peat two-thirds, turfy loam one-third, with a free admixture of coarse sand. Turn the plants out of the pots, carefully remove the drainage, and pick away the old soil from between the roots with a pointed piece of wood, being careful not to injure the roots. Pot rather firmly, but not very hard, and with the collar of the plant slightly elevated in the centre of the pot. In potting be sure no vacant space is left between the ball and the sides of the pot. The soil should be worked down with a flat piece of wood, and a gentle tapping of the pot on the bench will help to fix the soil and fill cavities.

Rooting Rose Cuttings (W. H. R.).—Probably the easiest and most certain method for amateurs to root Rose cuttings is by inserting them in sandy soil in the open ground towards the end of October. Trenches are cut for them, much as if preparing for Box edging, some sand being placed in and the cuttings pressed down into it till only one or two buds are above the level of the ground. The soil is then returned, trodden firmly against them, and a sprinkling of sand spread on the surface round the cuttings and well watered to exclude air. The cuttings are made from firm portions of the wood made during the summer, not soft growths, and may be from 6 to 8 inches in length. There is a possibility of a few rooting if several are inserted now in the manner indicated, but the autumn is a much better time for the work. If you insert any, remember that not more than an inch in length of each must be above ground, the remainder within it. Cuttings will also root in August, either outdoors or in a frame, and young shoots of Roses root in warm propagating cases in spring in charge of expert propagators.

Bryophyllum calycinum (W. Raby).—*Bryophyllum calycinum* is remarkable in producing young plants from very conspicuous leaf buds on the margins of the leaves when the latter are laid down on a damp surface in a warm atmosphere. It grows 2 to 3 feet high, and is an evergreen succulent shrub, of no value but interesting as a curiosity. Stove treatment suits it best, growing it in good loam in a temperature of 65°.

Soil for a Vine Border (B. R.).—There is nothing better than the top 4 or 5 inches of a pasture—that is, soil full of the fibrous roots of grasses. Unless the subsoil is naturally porous, put in a foot of rubble, and have a drain laid through it to conduct the water away, covering the stony rubble with turves, grass downwards; then make the border 2½ feet deep. A barrowful of old lime rubbish, and the same of wood ashes to ten or twelve of the turfy soil, would be a good addition, but the Vines would grow well in the loam alone if sound, not very sandy or of a strong clayey nature. A border 3 feet wide is sufficient the first year, adding to the width subsequently. Tread the soil rather firmly, but not hard, and it must not be very wet when this is done. Mix no manure with the turf, but spread some on the surface after the Vines are planted.

Carnation Leaves Diseased (A. T. N.).—Your specimens were considerably delayed owing to misdirection. The leaves are infested by the fairy-ring spot fungus (*Heterosporium echinulatum*). The common name was suggested by Mr. W. G. Smith, from the circumstance that the growth of the fungus from the centre of the spot is centrifugal, and the dark colour is apt to be arranged in concentric lines or rings, representing a miniature fairy ring. The fungus was first described by the Rev. M. J. Berkeley many years ago. The spores are brown in colour, and when produced in great abundance, as in your specimen, together with the threads, darken the spot upon the leaf, and the spot then possesses different shades of colour, according to the number of spores produced. The fungus is, to a great extent, induced by a damp stagnant atmosphere, which facilitates its development from the spores. The plant should be sprayed with a solution of permanganate of potash, or, if you have not a sprayer, sponge the leaves carefully with the solution. It may be necessary to repeat the dressing, giving the plant plenty of air, but not a very arid, yet comparatively dry condition of the atmosphere.

Propagating Indiarubber Plant (Amateur).—If you can command a bottom heat of 85° to 90° you can easily root the top of your Indiarubber Plant. Cut off the head about 6 or 8 inches long, remove one or two of the bottom leaves, and insert in a 4-inch pot in a compost of loam, sand, and leaf soil. Steady the cutting with a small stake. Plunge the pot in the bottom heat, surrounding it with cocoa-nut fibre refuse kept moist. The other portions of the stem having healthy green leaves may be cut into what are termed eyes with a leaf attached, each of which will form a fresh plant. The method of preparing these is as follows:—Cut out that portion of the stem containing the eye and its accompanying leaf. This is done by inserting the knife just above the bud, passing it down the centre of the stem behind the eye or bud, and out just below it. Each of these is secured to a short stick, which inserted in the pot keeps the bud steady, and affords support for the leaf, which should be tied or coiled round it. Three-inch pots and some sandy compost are prepared. The pots are filled with this, and each eye placed firmly in the centre. Plunge them to the rim in cocoa-nut fibre refuse in a propagating frame with a bottom heat of 90°, where they must remain until the eyes start into growth. When both eyes and top cuttings commence growing bottom heat is not absolutely essential, but they must have top heat of 65° to 70° in order to bring them on properly.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless *Apples* and *Pears* sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. *Dessert Pears* cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When *Plums* are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with *Peaches* and *Nectarines*, with information as to whether the flowers are large or small. (R. W.).—1, Cox's Orange Pippin; 2, Blenheim Pippin; 3, Gooseberry Pippin; 4, Wadhurst Pippin; the Pear is Catillac. (J. W. W.).—1, Reinette de Canada; 2, Newton Wonder; 3, Wormsley Pippin; 4, Court Pendu Plat; 5 and 6, unrecognisable. (W. P. F.).—1, Lord

Derby; 2, Norfolk Stone Pippin; 3, Minchnll Crab; 4, Dutch Mignonette; 5, Braddick's Nonpareil; 6, Northern Greening. (G. H. F.).—1, Dnmelow's Seedling, known also as Wellington and Normanton Wonder; 2, Bramley's Seedling; 3, Lord Derby; 4, Winter Hawthornden; 5, unknown and worthless; 6, Lane's Prince Albert.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (S. R. G.).—*Leucadendron argenteum*, the Silver Tree. (P. S.).—1, *Adiantum amabile*; 2, *A. pubescens*; 3, *A. cuneatum grandiceps*. (O. C.).—1, *Eurya latifolia variegata*; 2, *Coprosma Baueriana variegata*; 3, *Euonymus radicans variegata*; 4, *Ruscus hypophyllum*; 5, *Eleagnus variegatus*. (T. V. W.).—1, *Hedychium Gardnerianum*; 2, *Bambusa Fortunei*; 3, *Dendrobium Phalanopsis Schröderianum*; 4, *D. nobile*. (*Inquirer*).—Possibly a form of *Phalanopsis Stuartiana*. (A. E.).—*Restio subverticillata*.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

COVENT GARDEN MARKET.—FEBRUARY 28TH.

AVERAGE WHOLESALE PRICES.—FRUIT.

Trade still quiet.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
„ Californian ...	7 6	10 0	Melons, each ...	0 6	1 6
„ Canadian, barrel ...	10 0	15 0	Oranges, per case ...	5 0	15 0
„ Nova Scotian, barrel ...	10 0	17 0	„ Tangierine, box ...	0 6	1 9
Cobnuts per 100 lb. ...	60 0	70 0	„ Californian, seedless ...	16 0	24 0
Grapes, black ...	2 6	5 0	Pears, Californian, case ...	6 0	9 0
„ Muscat ...	4 0	8 0	Pines, St. Michael's, each	1 0	6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Lettuce, doz. ...	0 10	to 1 2
Asparagus, green, bundle	5 0	5 9	Mushrooms, lb. ...	0 8	0 10
„ giant, bundle	15 0	20 0	Mustard and Cress, punnet	0 2	0 0
Beans, Jersey, per lb. ...	2 0	2 6	Onions, bag, about 1 cwt.	4 0	8 0
„ Madeira, basket ...	2 0	2 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz. ...	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, ½ sieve ...	3 0	3 6	„ Teneriffe, cwt. ...	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz.	0 8	0 10
Carrots, per doz. ...	5 0	7 0	„ French, round, doz.	1 6	0 0
Cauliflowers, doz. ...	2 0	3 0	Seakale, doz. baskets ...	12 0	15 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bushel ...	3 0	5 0
Endive, doz. ...	1 6	2 0	Sprue, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs. ...	4 6	5 6
Leeks, bunch ...	0 3	0 0	Turnips, bunch ...	4 0	6 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ferns, small, 100 ...	4 0	to 8 0
Arbor Vitæ, var., doz. ...	6 0	36 0	<i>Ficus elastica</i> , each ...	1 6	7 6
Arums, per doz. ...	18 0	24 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	12 0	18 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Chrysanthemums, each ...	1 0	4 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Crotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	8 0	12 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

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Anemones, doz. bunches ...	2 0	to 3 0	Lily of the Valley, 12 bun.	9 0	to 18 0
Arums ...	4 0	6 0	Maidenhair Fern, doz. bnch	8 0	10 0
Asparagus, Fern, bunch ...	2 0	2 6	Marguerites, doz. bnchs.	3 0	4 0
Bouvardia, bunch ...	0 6	0 9	„ Yellow, doz. bnchs.	4 0	6 0
Carnations, 12 blooms ...	2 6	3 6	Mimosa, per bunch ...	1 6	2 0
Cattleyas, per doz. ...	12 0	18 0	Mignonette, doz. bunches	3 6	8 0
Christmas Roses, doz. ...	0 6	1 0	Narcissus, white, doz. bun.	2 0	3 0
Chrysanthemums, white			„ Yellow, doz. bunches	2 6	3 0
doz. blooms	6 0	9 0	„ double, doz. bunches	2 0	4 0
„ yellow doz. blooms	5 0	8 0	Odontoglossums ...	5 0	7 6
„ bunches, var., each	1 6	3 0	Pelargoniums, doz. bnchs	8 0	12 0
Daffodils, double, doz. bnch	6 0	8 0	Roses (indoor), doz. ...	6 0	8 0
„ single, doz. bnch.	6 0	12 0	„ Red, doz. ...	6 0	8 0
Eucharis, doz. ...	6 0	8 0	„ Safrano, packet ...	3 6	4 0
Gardenias, doz. ...	6 0	8 0	„ Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	5 0	7 6
bnchs. ...	6 0	9 0	„ Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	6 0	8 0	Smilax, bunch ...	6 0	7 0
Lilium Harrisii, 12 blooms	6 0	8 0	Tulips, scarlet, bunch ...	0 6	0 8
„ lancifolium album ...	3 6	4 6	„ yellow, bunch ...	1 0	1 6
„ rubrum ...	3 6	4 6	„ bronze, bunch ...	1 0	1 6
„ longiflorum, 12 blooms	8 0	10 0	Violets, Parma, bunch ...	3 0	4 0
Lilac, white, bundle ...	4 0	6 0	„ dark, French, doz.	2 0	3 0
„ mauve, bundle ...	6 0	8 0	„ „ English, doz.	2 0	3 0



FARMING BY THE BOOK.

THE spread of knowledge in the country villages has been comparatively slow, but with very great improvement in the management and general efficiency of the village schools we have entered upon an era of greater knowledge—and better still, of greater desire for knowledge. Will farmers leave all such ambition to the rising generation; or will they bestir themselves, put aside all old-fashioned and absurd prejudices, and try to farm not only in a scientific manner, but in obedience to the rules of arithmetic as displayed in reliable statistics?

In most modern large establishments a record is kept of the work turned out, and the profit made by every machine, loom, or engine. As soon as it is found that a certain section of the business is not paying its way strict inquiry is made, and either improvements are instituted, with a view to producing a better result, or the machine is discarded, to make room for one which gives better promise of success.

How many farmers who are not large milk producers take any trouble to test the productiveness and profit of their dairy cattle? How many are there who weigh their feeding cattle every week, and are thus enabled to judge when the animals are paying for their food, and when they are not? Some horses will do more work than others, and with less food. These animals should be carefully cherished, for good horses and good men are not plentiful, and when found should be made a note of. Farmers spend large amounts of money in cakes and manures, but they too often look upon such things as necessities because their neighbours do the same; they take things too much as granted, and do not ask sufficient questions of themselves as to the reasons for the profit or want of profit on a certain crop. Absence of care and observation in such matters has much to do with want of success in making agricultural ends meet as things are now, for with expenses increasing and prices of produce standing still, if not declining, the balancing of the account is no easy matter.

One of the great drawbacks of farming is the great length of time which is occupied by so many of its operations. It therefore appears to be the more necessary to keep a close watch on those sections of farm management where defects may be early remedied.

When a cow by monthly tests is found to be unprofitable, why keep her for dairy purposes any longer? at any rate she should not be retained in the breeding herd, unless her offspring are likely to make

a paying price as pedigree stock. There are thousands of cows being milked at the present time (on British farms) which do not pay for their keep, and in many cases where several cows are kept on one farm, the farmer or his wife, even if they milk the cows themselves, have very vague ideas as to the actual butter return of the several animals. The results of tests of the produce of individual cows both in England and in the United States have been very startling, and in many cases have led to the discarding of favourites and the advancement of bovine Cinderellas to the vacant stalls.

Much of the misconception as to the value of dairy cattle is traceable to the hands who do the milking. Many of the best butter cows are what is called "hard to milk." The milk does not come down readily, and especially the stoppings which generally contain the largest proportion of fat. It is too often the interest of the milkman or maid to neglect such a cow and to give a high character to one which lets the milk down easily and gives a fair quantity though of very poor quality. The milk from the two is mixed, and the owner is deceived as to the capacity of his animals; the only way to obviate such a result is a careful test every month under personal supervision.

An accurate knowledge of the amount of money expended in labour on the several crops of the farm is indispensable if the farmer is to be quite certain where his profit comes from, or to know the real cause of his losses. For instance, the Potato crop when successful is a profitable one, but it demands a large expenditure of labour, often more than is sufficiently realised, and if an exact record were kept of the daily occupation of each farm hand, showing in what way his or her time had been spent, it would not be difficult to arrive at a fairly accurate estimate of the cost of producing any crop. By such means the returns from such a speculative crop as the Potato throughout a series of years could be balanced up, the loss deducted from the profit, and the net value of the crop be ascertained.

The same system should apply to the Carrot and Celery crops, which are of an equally speculative nature. Then there is the food consumed by the cattle, sheep, and poultry! Unless the food, whether purchased or of home production, is charged to the particular variety of live stock which consumes it, how is the farmer to know which stock pays him best?

It is the practice on thousands of farms to sell the Wheat and Barley after being properly dressed, but to give no credit to the grain crops for the tail corn which is ground up for the pigs or used by the housewife for the hens. Even small shrivelled grain has its value in £ s. d., and when valued should be paid for by the department consuming it.

The practical begging of good and useful food for pigs and poultry without the same being taken into account properly is often the cause of very mistaken ideas as to the profitability of these two kinds of farm stock. The gross return from such sources may appear to be all profit and highly satisfactory, but tail corn and offal Potatoes possess a saleable value, and ought to be accounted for.

We do not suggest that a balance should be struck every year as between the several products of the farm, but that such records ought to be kept that, when any item is in a doubtful position, and it is thought desirable, means may be available to solve the doubtful question.

WORK ON THE HOME FARM.

Professor Wrightson, writing for the "Agricultural Gazette," has started a very interesting discussion on the cost of keep of farm horses, one point in dispute being whether attendance to the horse and feeding should be charged to the keep of the horse or the labour bill. The Professor says that attendance to the horse cannot be dissociated from the labour bill, and we quite agree with him; but we would go further, and charge the whole maintenance of the horse to the labour account; for to what purpose is the horse kept except for purposes of labour? in fact, what man cannot do the horse or steam power is introduced to perform, and where the horse is not made full use of for purposes of cultivation the bill for manual labour is proportionately excessive. The labour bill should include all charges for manual, horse, or steam power.

The heavy fall of snow last week, followed as it has been by heavy

rains, has left the country in a parlous state. Thousands of acres of land are under water, and farm work is at a standstill. Turnips are all finished, or we hardly dare say what the condition of a Turnip fold would now be. During the blizzard hundreds of sheep were reeked up with snow, and had to be dug out.

Every farmer we speak to has finished all his roots except Mangold, and we see waggonloads of sheep going to market, the empty waggons returning with cake for the animals left in the "wilderness." During an experience of thirty-two years we have never seen anything so like a Turnip famine before.

What is worse is the bad state of the young Clover plants; the only well-set fields we have heard of are on strong land very early sown. Here we have a hint for next season; but farmers are so afraid of harvesting difficulties that they are chary of early sowing. Does the string-binder enter into their calculations here? If so it has much to answer for.

It appears, from a statement in the "Dublin Farmers' Gazette," that a new disease has been discovered among Potatoes. It is termed the yellow blight or root-rot disease. Yellow blotches appear on the leaves, occasioned by the interception of nutriment by the fungus in the stems and roots. We shall probably hear more of this new disease.

We hear that the farmers of the United States are about to set us an example in the way of combination on a large scale. Efforts, we are told, are being made to induce both Wheat and Maize growers to form numerous combinations among themselves for the purpose of building and controlling elevators and doing their own commission work.—("Agricultural Economist.")

RECORDS OF THE DAIRY HERD.—On all well conducted farms where milk is produced, one point always seen to is the keeping of an accurate record of each animal's milk-producing powers. In some instances each cow's milk is measured, and the quantity recorded, or more often it is weighed. Now the latter system may be considered much preferable, as being decidedly more accurate, for, as is well known, good milkers, by reason of the fast flow of milk into the pail, cause a head or froth to collect on the surface, which very much interferes with measuring; therefore to weigh is the better plan. On most farms visited where the milk is weighed the ordinary weighing machine (as used for weighing cake, corn and wool) also answers the purpose for milk, a special bucket (previously weighed) standing on the machine. The milker empties each cow's yield separately into this, and records the weight, deducting from each of these the known weight of the pail.—("Farmer and Stock-breeder.")

CATTLE FOODS.—Oat chaff is better than straw, is relished by cattle, and may be used raw, mixed, or boiled. Oat straw is a most useful food, containing large quantities of starch and digestible fibre, and ought to be better taken care of than it usually is. Used with 8 lbs. or 10 lbs. of linseed cake, or 14 lbs. to 16 lbs. of grain or bran, cattle of 1000 lbs. will get quite fat on it. Compared with other foods, good Oat straw is worth 35s. to 40s. per ton for feeding, while for manure it is not worth 5s. per ton. The farmer who wastes it in litter or otherwise loses 30s. to 35s. per ton. Wheat and Barley straw are useful, although inferior to and less relished than Oat straw. Turnips are relished by all cattle, and, where possible, it is a good plan to wash and pulp them, and to add to the pulp the extra food to be given. The washing clears the roots of superfluous mud and sand, which, when in quantity, induce irritation of the bowels and scouring, and pulped Turnips are relished, and save young beasts the labour and pain of cutting the roots when shedding the incisor teeth. Cattle from eighteen to twenty-four months are, says a writer in an agricultural contemporary, difficult to make fat with Swede Turnips, unless these are either sliced or pulped, and with water power available and proper arrangements the extra labour involved is insignificant.

YEW TREE POISONING AND HOW TO TREAT IT.—It is during weather such as the present, when snow is on the ground, and animals are unable to obtain the natural green food upon which they so largely subsist when allowed an outrun, that the risk of poisoning from the consumption of the leaves of the Yew tree, and other poisonous plants, becomes specially pronounced. It is well known that animals which, under ordinary circumstances, would pass by a Yew tree without touching it, very often commence nibbling at its tempting green leaves when deprived of their ordinary green food in the shape of grass. Wherever such trees are growing in the neighbourhood of places where cattle are kept, special precaution should be taken to guard against the animals getting access to them while snow is on the ground. There is still much uncertainty regarding the manner in which the Yew tree poison acts, but it is well established that the leaves or twigs are specially dangerous when taken on empty stomachs, and that they are also much more dangerous in a semi-withered state than if consumed when quite green or in an actively growing condition. In case of an accident through which an animal may have obtained access to a plantation or lawn and partaken of the leaves of Yew trees growing thereon, the best course of treatment is to administer at once about two glasses (say four ounces) spirits of ammonia, and half a pint of brandy in a quart of linseed or flour mucilage.—("Farmers' Gazette.")

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Journal of Horticulture.

THURSDAY, MARCH 8, 1900.

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CHRYSANTHEMUMS UP TO DATE.

IT is now two years since I had the pleasure of conducting an election of Japanese and incurred Chrysanthemums for the pages of the *Journal of Horticulture*. Since that time the increase in the number of varieties is large, especially in the Japanese section, as the result of this audit will prove. There has been, too, an advance in the incurred section, thanks to the deep interest taken in hybridising for the increase of variety, form, and colour, not only by foreign raisers but by enthusiasts at home. That the publication of such a list of desirable varieties in both sections by experts cannot fail to be of interest to all lovers of the autumn queen and very useful to beginners.

For amateurs especially such an audit must be valuable, as it is difficult for them to make up a collection of varieties in a limited space. It is also pleasing to learn that this audit of up-to-date varieties is highly interesting to cultivators in Australia and New Zealand, where Chrysanthemum culture is rapidly on the increase. As in 1898, thirty-three electors have kindly taken part in the present audit. To them my thanks are due for their co-operation, and also to Mr. James Threlfall, head gardener at Rainford Hall, St. Helens, especially for aid in the tabulation of the returns.

A few remarks on individual varieties and their position in the audit may be interesting. As in 1897, several varieties tied for the 'premier position. There are certain standard sorts that are of such high quality on the exhibition table, that they cannot be omitted by the electors, hence the great number receiving an equal share of votes. Who, I would ask, could leave out of a list of even two dozen sorts the three members of the Carnot family? In addition to these named, Phœbus and Mons. Chenon de Léché are also at the head of the poll in the same way that they were in the last election. Mrs. White Popham, a variety not once named in the last audit, now ties with five others for premier place. The variety is of English origin and must be regarded as a monster. Here, then, is an unmistakeable instance of the general love for size in Chrysanthemum blooms.

No. 2684.—VOL. CII., OLD SERIES.

No less than six tie for the third position; all with one exception were included in the last election. Miss Nellie Pockett is an Australian raised variety sent over two seasons ago, and its rapid progress forms a good estimate of its quality. Those sterling varieties Vivian Morel and Charles Davis still maintain a high position, and rightly so, as they possess all the characteristics of high quality blooms combined with an ideal habit of growth. Edwin Molyneux retains a remarkable hold upon cultivators and the public alike, despite its fourteen years of hard toil and wear. No variety yet can equal it in point of colour, although many seedlings have been raised from it. The position occupied by Mrs. Barkley is a proof of how cultivators seize upon sterling novelties, and must be very gratifying to the raiser, Mr. Weeks.

French seedlings have not been quite so successful of late, as with the exception of Madame Carnot, Phœbus, and Mons. Chenon de Léché we do not find any occupation in the list until we get to Le Grand Dragon, a variety which will not, in my opinion, have a very long stay as a leading sort.

R. Hooper Pearson, with its magnificent yellow colouring, could not fail to receive considerable support, as it does with twenty-eight votes. Etoile de Lyon, once so popular, fails to receive more than seven marks, with Col. W. B. Smith one less. Mdlle. Thérèse Rey cannot find more than four supporters although once so popular. This latter instance is a plain proof that size is an important factor in exhibition Chrysanthemums. No less than seventy-one varieties are named only once, which is a striking illustration of the wide range of choice required by the electors. The fact of there being but one mention of hairy or hirsute varieties—Hairy Wonder—amongst the whole 231 varieties, is a sufficient proof of the want of popularity of this section.

I think that it will be admitted that the selection of sixty varieties does not contain a single variety that can honestly be termed "coarse." The bulk of the varieties are remarkable for their "build," possessing much depth and breadth, with, in the main, a plentiful supply of semi-drooping florets.

VOTES FOR THE BEST SIXTY JAPANESE.

33	Madame Carnot	16	H. J. Jones
33	Mrs. Mease	15	Australian Gold
33	G. J. Warren	15	J. R. Upton
33	Mrs. White Popham	14	Pride of Exmouth
33	Phœbus	14	Graphic
33	Mons. Chenon de Léché	14	Julia Scaramanga
32	Mrs. J. Lewis	14	Mrs. W. H. Lees
31	Mrs. H. Weeks	14	Lionel Humphrey
31	Mutual Friend	13	Madeline Davis
31	Miss Nellie Pockett	13	John Pockett
31	Edith Tabor	13	Miss Elsie Teichmann
31	Australie	13	Duke of Wellington
31	Lady Hanham	12	Joseph Chamberlain
30	Vivian Morel	12	Lady Crawshaw
30	Charles Davis		
30	E. Molyneux	11	C. H. Payne
30	Mrs. Barkley	11	Sir Herbert Kitchener
30	Lady Ridgway	10	Florence Molyneux
30	Le Grand Dragon	10	Milano
29	Mrs. G. W. Palmer	10	G. C. Schwabe
29	Mrs. Coombes	10	Hon. W. F. D. Smith
29	Pride of Madford	10	Mr. T. Carrington
28	Madame Gustave Henry	9	Mrs. Ritson
28	Oceana	9	Swanley Giant
28	Simplicity	8	Marie Calvat
28	R. Hooper Pearson	8	Souvenir de Madame Rosette
25	Mrs. J. W. Barks	8	Lady E. Clarke
24	James Bidencope	8	Modesto
24	N.C.S. Jubilee	8	W. Curshaw
24	H. Weeks	8	Joseph Brooks
23	Chatsworth	8	Matthew Hodgson
23	Mary Molyneux	8	Edith Dashwood
21	Master H. Tucker	8	Emily Silsbury
20	Ella Curtis	7	Mme A. Rosseau
20	Eva Knowles	7	Jane Molyneux
20	Emily Towers	7	Mrs. W. Seward
20	Mons. Hoste	7	Pride of Stokell
20	Lady Byron	7	Elthorne Beauty
19	Madame G. Bruant	7	President Nonin
19	M. Louis Remy	7	Etoile de Lyon
19	Lord Ludlow	7	Secrétaire Fierens
18	Madame Philip Rivoire	6	Miss Edith Pilkington
18	Soleil d'Octobre	6	Lady Phillips
17	Mons. Panckoucke	6	W. Bardney
17	Surpasse Amiral	6	Madame J. Beisant
16	Robert Powell	6	Col. W. B. Smith

6	Madame Gabriel Debré	1	L. Seward
6	General Robert	1	Madame A. Brunn
6	Mrs. G. Pitcher	1	Robert Owen
6	Western King	1	Lord Brooke
6	Louise	1	Madame Couvat du Terrail
6	Mrs. Maling Grant	1	Directeur Liberté
6	Mrs. F. A. Bevaux	1	Mrs. J. C. Waterhouse
6	Duke of York	1	Mrs. D. Nicol
6	Wonderful	1	Pink Carnot
5	Hero of Omdurman	1	Mrs. D. Dawes
5	H. R. Langton	1	General Payne
5	Lord Cromer	1	G. H. Kerslake, jun.
5	Mrs. A. H. Hall	1	Mrs. C. E. Clayton
5	Miss Alice Byron	1	Lady E. Saunders
5	Madame M. Ricaud	1	Mrs. C. Blick
5	Mrs. A. H. Barrett	1	Lily Mountford
5	T. Wilkins	1	Beauty of Adelaide
5	Madame Louis Remy	1	Reine d'Angleterre
4	Mons. Fatzer	1	Mrs. A. Tate
4	Mdlle. Laurence Zédé	1	Hairy Wonder
4	Beauty of Teignmouth	1	Mr. C. Bower
4	T. Rey	1	Lord C. J. Lopes
4	Niveus	1	Mons. Desblanc
4	Mrs. G. Carpenter	1	Perle Fine
4	Mons. Gruyer	1	Walleroo
4	Amy Ensoll	1	Kathleen Rodgers
4	Annie Prevost	1	Queen of the Exe
4	Fair Maid	1	Royal Sovereign
4	Samuel C. Probyn	1	C. Shrimpton
4	Mr. H. Crawford	1	Queen of Portugal
4	Royal Standard	1	Good Gracious
4	Reginald Godfrey	1	Baronne Rothschild
4	International	1	Madame Jossier
4	Mrs. R. Jones	1	Madame R. Solomon
3	Mrs. Hermann Kloss	1	C. W. Richardson
3	Mrs. S. C. Probin	1	Madame Ad. Chatin
3	C. F. Payne	1	Mdlle. M. A. de Galbert
3	Madame Von André	1	Lady E. Smith
3	Helen Shrimpton	1	Khama
3	Werther	1	W. Towers
3	Mdlle. Louis Brossillon	1	Beauté Grenobloise
3	President Bevan	1	Yellow Mutual Friend
3	General Paquie	1	Mrs. D. Dewar
3	Madame Desblanc	1	Lady Janet Clark
3	Madame Cadbury	1	Nina Dabbs
3	Mrs. J. Bryant	1	Madame C. Terrier
3	Dorothy Seward	1	The Convention
3	Mrs. Harman Payne	1	Mdlle. Marie Hoste
3	Celesté Falconett	1	Amiral Avellan
2	George Seward	1	Mons. C. Molin
2	Belle Mauve	1	Autumn Glory
2	Mrs. A. G. Hubbuck	1	Miss Lulu Miranda
2	J. R. Clayton	1	Mrs. G. Barnes
2	John Bridgman	1	Sir W. J. Clarke
2	G. Luckman	1	Vicar of Leatherhead
2	Little Nell	1	Marquis of Salisbury
2	John Seward	1	Silver Queen
2	Mons. H. J. Jones	1	Mons. R. Dean
2	Mabel Kerslake	1	Ethel Addison
2	Wattle Blossom	1	Mrs. Feusden
2	Yellow Mogul	1	Rose Wynne
2	Mons. E. André	1	Ialene
2	Corsair	1	Madame Rozain
2	T. B. Haywood	1	David Inglis
2	Miss Maud Douglas	1	W. Wright
2	Scottish Chief	1	Fred Joy
2	Nora Broomhead	1	Souvenir de F. Rodgers
2	Mrs. A. G. Miller	1	Mdlle. Gabrielle Seince
2	W. Adams	1	Amateur J. Leschapelais
2	Madame C. Molin		
1	Suzie		

231 varieties.

INCURVED VARIETIES.

In the selection of incurved varieties the reader will be struck by the decline of the Queen family in public favour. In the present instance the selection includes five varieties of this type. Even then only twenty-three votes are given for Empress of India and John Lambert cut of a total of thirty electors in the section. In the last election seven varieties of the Queen family occupied a place in the selected thirty-six, Empress of India heading the list with a total of thirty votes. Since that time great changes have occurred in the incurved section. The older type of flower has declined entirely, owing in my opinion to a decay of constitution. C. H. Curtis, as was to be expected, heads the list. Duchess of Fife still maintains its position as one of the leading varieties, while Globe d'Or has improved its place.

Madame Ferlat, a somewhat new French-raised variety, takes quite a leading position. Princess of Wales, although given a good position by the electors, has not during the last two seasons been seen in anything like its form of say ten years since. This type, once a favourite, is, I fear, gradually weakening. The once popular

Prince Alfred cannot at the present moment command more than five supporters; while the much vaunted Mons. R. Bahuant receives one mark less. Princess Teck, Hero of Stoke Newington, and Lady Dorothy are mentioned twice each, while Baron Beust, Refulgence, and Barbara, a trio of favourites twenty years since, are only once named in a selection of no less than 126 varieties. Although so large a number are quoted it cannot be said that many of them will be heard of again in any degree of prominence; they are in my opinion of too "rough" a character to please the true florist.

VOTES FOR BEST THIRTY-SIX INCURVED.

30	C. H. Curtis	4	Mrs. R. King
29	Duchess of Fife	4	Mons. R. Bahuant
28	Globe d'Or	4	Madame E. Rodger
28	Madame Ferlat	3	La Marcadeon
27	Mrs. R. C. Kingston	3	S. M. de la Drome
27	Lady Isabel	3	Ada Owen
26	Princess of Wales	3	Miss Phyllis Fowler
25	Miss M. A. Haggas	3	Mrs. W. Howe
25	Ma Perfection	3	President Bevan
25	Robert Petfield	3	W. Neish
24	Lord Alcester	3	Matthew Russell
23	Hanwell Glory	3	Mrs. W. Harvey
23	Empress of India	3	Major Matthew
23	John Lambert	2	Duc d'Orleans
23	Miss Violet Tomlin	2	John Salter
22	Miss Dorothy Foster	2	Pearl Palace
22	Jeanne d'Arc	2	Mrs. Sarah Owen
21	Mrs. S. Coleman	2	Mrs. J. W. Wilkinson
21	George Haigh	2	Mrs. A. Jack
21	Baron Hirsch	2	Mrs. Col. Goodyear
20	Topaze Orientale	2	King of Orange
20	Mlle. Lucie Faure	2	M. P. Martignac
20	Queen of England	2	General Symonds
19	Miss A. Hills	2	Lucille de la Drome
19	Bonnie Dundee	2	Golden Nugget
19	Lucy Kendall	2	Thomas Singleton
19	J. Agate	2	The Egyptian
18	Mrs. H. J. Jones	2	Mrs. J. Gardner
16	W. Tunnington	2	Mrs. N. Davis
16	Chrysanthème Bruant	2	W. Carpenter
16	Ernest Cannell	2	Princess of Teck
15	Miss V. Foster	2	Lady Dorothy
15	Mrs. W. C. Egan	2	Dome d'Or
13	King of Yellow	2	Hero of Stoke Newington
12	Madame Darier	2	Harold Wells
12	Golden Empress	1	Comtesse de Forbin
12	Yvonne Desblanc	1	Lyne, Jun.
12	Mrs. N. Molyneux	1	Mrs. E. Bennett
11	Lord Wolseley	1	Baron Beust
11	D. B. Crane	1	General Mauric
11	Brookleigh Gem	1	Golden Gem
11	Mrs. J. Murray	1	Mrs. F. Wood
9	Countess of Warwick	1	Mrs. Mitchell
9	Alfred Salter	1	Mrs. L. de Black
8	Austin Cannell	1	C. S. Bates
8	Lord Rosebery	1	Dorothy Spaulding
8	Rose Owen	1	Bronze Beauty
7	John Doughty	1	Baronne de Veillard
7	Nellie S. Threlfall	1	John Carville
6	Mons. Desblanc	1	Mrs. J. Kearn
6	Mrs. J. Eadie	1	Barbara
6	John Miles	1	Watteau
5	Ialene	1	Owen's Crimson
5	Triomphe d'Eve	1	Fouka
5	Prince Alfred	1	R. Cannell
5	Thomas Lockie	1	Mrs. F. Hepper
5	Pearl Dauphinoise	1	J. Pearce
5	Leonard Payne	1	John Fulford
5	C. B. Whitnall	1	Refulgence
4	Ralph Hatton	1	Rena Dula
4	C. Bates	1	Mons. Blanc
4	M. Emile Nonin	1	Ideality
4	Mrs. Heale		
4	Mrs. Gerald Williams		

126 varieties

TWELVE NEW JAPANESE.

The enumeration of new varieties of Chrysanthemums is always interesting, as it reveals peculiarities of selection. To obtain twelve of the most popular eighty-eight sorts are given. Florence Molyneux heads the list by four votes, Madame R. Cadbury following with sixteen. Yellows as usual preponderate; as many as five are named, while only three white flowered varieties are included. Here again English raised sorts are in the ascendant, the whole dozen having been produced at home. No less than forty secure one vote each. In this latter the number is much increased by the inclusion of varieties not strictly new, some of them having been before the public certainly three seasons.

At one time it was said that the type known as Japanese incurved was unduly favoured. This assertion cannot now be supported, as there is a preponderance of varieties of a semi-drooping habit of floret. For vase decoration it cannot be said that the former are better suited than the latter type, as they possess all the characteristics necessary to obtain a pleasing effect either when cut with long or short stems.—EDWIN MOLYNEUX.

VOTES FOR TWELVE NEW JAPANESE.

20	Florence Molyneux	2	Mrs. A. H. Hall
16	Madame R. Cadbury	2	Mrs. J. Bryant
14	R. Hooper Pearson	2	Le Grand Dragon
14	Miss Edith Pilkington	2	Pink Madame Curnot
14	Madame Von Andre	1	Madame Lucie Recoura
12	Mrs. A. Tate	1	Annie Prevost
12	Lord Ludlow	1	Mrs. D. Nicol
11	Mrs. Barkley	1	Reginald Godfrey
11	Miss Alice Byron	1	W. Cursley
10	Mrs. Coombes	1	E. Smith
9	H. Weeks	1	Snowdrift
9	Vicar of Leatherhead	1	Mrs. J. Beisant
8	Mrs. W. Cursham	1	Mrs. J. W. Barks
8	Miss M. Douglas	1	Edith Dashwood
7	M. Louis Remy	1	Lady Salisbury
6	H. J. Jones	1	Mrs. J. J. Tilley
6	Lord Salisbury	1	Mrs. White Popham
6	Lionel Humphry	1	President Bevan
5	Emily Towers	1	C. F. Payne
5	Souvenir de Marchioness of Salisbury	1	Madame Gabriel Debrie
5	Silver Queen	1	Pride of Stokell
4	Madeline Davis	1	Robert Powell
4	J. R. Upton	1	T. P. Carrington
4	Sir H. Kitchener	1	Miss Nellie Pockett
3	Sir R. Buller	1	Mr. A. H. Barrett
3	Lady Janet Clark	1	H. Rivers Langton
3	Lord Cromer	1	Mrs. Ewart Barter
3	George Towers	1	Mr. H. E. Fry
3	Lily Mountford	1	Mrs. N. Morgan
3	Scottish Chief	1	W. H. Whitthouse
3	Francis Pilon	1	Nellie Perkins
3	George Davis	1	Madame B. Fray
2	Mrs. G. Barnes	1	Samuel C. Probin
2	Wonderful	1	Queen of the Exe
2	Lady Crawshaw	1	George Seward
2	Little Nell	1	David Inglis
2	Mrs. W. Seward	1	Mr. J. Brooks
2	Fair Maid	1	M. Laird
2	Hero of Omdurman	1	Lily Boutroy
2	Sir W. J. Clarke	1	Celeste Falconette
2	Robert Laird	1	Marquise of Salisbury
2	Wattle Blossom	1	Madame Couvat du Terrail
2	W. F. D. Smith	1	Amateur Leschapelais
2	Miss Lullah Miranda	1	Beant

88 varieties

HARDY BAMBOOS.

It is doubtful whether any other class of plants has risen so rapidly in public favour as this. Ten years ago a few species only were grown, and the gardens containing them were few and far between. Now many of our up-to-date gardens contain large collections, and, judging from the number of plants seen in nurseries where before a Bamboo was rarely if ever found, the demand keeps steadily increasing. That the Bamboo well deserves its popularity is very evident, for it has introduced into gardens quite a new feature, and one which adapts itself admirably to the requirements of modern horticulture. Contrasted with the old style of evergreen shrubbery—stiff and formal with its mixture of Aucuba, Laurel, Box, Yew, and Privet—a group of Bamboos shows to great advantage, the light and graceful appearance of the long arching shoots, clothed with dainty, light green leaves, producing an effect surpassed by no foliage tree or shrub, and equalled, possibly, only by the elegant, wand-like shoots of the Weeping Willow.

The honour of bringing these plants into such prominence lies, to a great extent, with Kew and Mr. Freeman-Mitford, for, although a few species have been grown in some—particularly Cornish—gardens for a long period, nothing had been done in the way of forming a really representative collection until the authorities at Kew and the above mentioned gentleman took the matter in hand. At Kew a collection of hardy Bamboos has been grown outside for a dozen years or more, but it is only eight years since the subject was taken up in real earnest. At that time the number of hardy species obtainable was

very limited, and the nomenclature bad, but plenty of energy was put into the matter, and now the collection is as representative a one as it is possible to get, while the naming is as near perfection as it can be without having flowering specimens.

Altogether about forty-five species and varieties are grown in the open air at Kew. Of these about five are scarcely hardy enough to be recommended for general cultivation, though they are quite at home in the genial climate of the south-western counties. The remainder are perfectly hardy, having stood the severe test of 1895 without injury. The number of species and varieties alluded to are confined to three genera, as follows:—*Arundinaria*, seventeen species and three varieties; *Bambusa*, eight species; *Phyllostachys*, ten species and one variety. In addition to these there are a few others that are not yet developed sufficiently to allow of their correct names being determined, or have not been tested as to hardiness.

Japan is the home of the majority, twenty-nine species coming from that country. China gives us five, the temperate Himalayas four, and North America one, while the countries of several species are doubtful. The Himalayan species are the tenderest, and should only be planted in places where very severe frost is unknown; about London they are cut to the ground line by sharp frost, but grow again during the following summer.

To select a few and say they are the best would be misleading, for all have their special charms, which show to advantage when contrasted with one another. The straight 15 feet stems of *Arundinaria Simoni*, with thick tufts of side branches; the graceful arching shoots of *A. nitida*, with small, elegant, pale green leaves; the large handsome foliage of *Bambusa palmata* and *tesselata*; the elegant leafy shoots of the various *Phyllostachys*; the golden stems of *P. Castillonis*, with a bright green channel between the nodes; the rich green carpet formed by the dwarf growing *Arundinaria pumila* and *Bambusa pygmaea*, or the variegated *A. Fortunei*, have each their own form of beauty, which to be fully appreciated must be seen.

At Kew a garden is formed of Bamboos and kindred plants, and this appears to be the style of planting adopted by most people when making a collection. The method has much to recommend it, for, in addition to the beauty of each species being enhanced by the contrast with its neighbour, it is much easier to give them the few special attentions they require than when they are scattered about.

When selecting a site for the formation of a Bamboo garden special attention should be given to shelter, for, although perfectly hardy, the leaves are quickly turned brown if exposed to a cutting north or east wind; a cold, cutting wind without frost will do more damage than 25° of frost without wind. Provided the soil is good its consistency makes little difference, stiff clayey loam and light black soil answering equally well. If the soil is naturally poor it should be enriched by a good dressing of leaves and cow manure when being trenched. It is a very necessary item that water should be within easy distance, for in a dry summer abundance of water will have to be given if the plants are to be kept in good health.

At Orwell Park, Ipswich, Bamboos are very effectively planted in grass on the sloping banks of a stream. The soil is rich and spongy, and the plants naturalise very quickly, suckers running about and springing up in all directions. The value of the Bamboo for planting in close proximity with water is well shown at Gunnersbury House, where a good collection has been formed along one side of the lake. In such places as the two mentioned it is a very easy matter to give plenty of water with little expense. Although collections grown together are to be recommended, isolated specimens of such kinds as *P. viridi-glaucescens*, *P. mitis*, *Arundinaria japonica*, *A. Simoni* come in admirably if given suitable places. It is a mistake to have Bamboos in too conspicuous a position, for they take on a decidedly rusty appearance for two months, at a time when other plants are at their best—i.e., from the middle of March until the middle of May; this disadvantage can, however, largely be overcome by judicious planting.

By far the best time to plant is May, when growth is commencing. If plants are received in winter, it is advisable to pot them and stand in a greenhouse until May. If they are imported from Japan they ought to be potted and kept indoors until growth is active. When established out of doors it is a good plan to top-dress with leaves and cow manure early in summer, and thin out a number of the oldest branches annually. Division is the best means of propagation; each little bit with roots will quickly form a good plant if planted in soil containing plenty of decayed leaves.

Intending planters will do well to pay a visit to Kew before deciding on a selection, for by seeing them growing a much better idea of their respective virtues can be obtained than by long written descriptions. In the Kew "Hand List of Hardy Trees and Shrubs" the Japanese names, which are found in Japanese catalogues, are given as synonyms of the correct scientific names, so making straight what was at one time a decidedly crooked path.—W. D.



LÆLIA EDISSA

At the Drill Hall on the 27th ult., there was a magnificent display of Orchids, and the contributors included both amateur and professional specialists. An exceptionally large number was placed before the Orchid Committee with a view to special awards, but this body was not easily pleased, and only a very few were thus honoured. Amongst them was *Lælia Edissa*, which was exhibited by Messrs. Jas. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea; to this a first-class certificate was recommended. *L. Edissa* (fig. 51) is said to be the result of a cross between *L. anceps* and *L. purpurata*, the former being the seed-bearing parent. In shape the newcomer resembles the first named. The sepals and petals are soft lilac purple, while the handsome lip is rich crimson with a purple suffusion and a paler margin.

REPOTTING ORCHIDS.

Careful Orchid growers do not make a special time for repotting, but all through the year give new compost to various plants as they need it. But February and two succeeding months are the busiest of the year in this respect. Many plants that are not usually classified are given a look round now, and there are several important sections also needing attention. The Mexican *Lælias*, for instance, and especially *L. anceps* and *L. autumnalis*, will be starting, and in order to give them the full benefit of the new material the plant should be repotted in time to catch the first flush of young roots.

These, as a general rule, do not need a large amount of compost, and often a few bits of fresh peat and moss may be introduced about the young leads without really disturbing the older roots much, an advantage of course. But it should never be done when repotting is necessary, that is, when it is evident that the old material is in a bad state. Spreading laterally as these plants do, the extra size of the receptacle will need to be in width rather than depth.

Most of the *Cypripediums* again, as they go out of flower, will need attention, but here a different plan is necessary. The roots, though large, are not so easily injured; moreover, they take a new hold quicker than the true epiphytal roots of the *Lælias*, so in giving new material these should be well spread out and the compost worked between them. Only in the case of small plants and certain weakly growers is it necessary to keep the crown above the rim of the pot, the majority being better suited when kept about an inch below, as in ordinary potting.

Thunias, *Calanthes*, and the later flowering *Pleiones* also need attention, and in each case the procedure is very similar, all the plants delighting in a fair proportion of loam in the compost; and all must be done before young roots begin to push from the new leads. Large root-bound plants of *Cymbidium Lowianum*, *C. giganteum*, and a few others of this strong growing section, are rather difficult to deal with. Obviously it is impossible to separate the thick mass of roots, as tightly twisted as those of a pot-bound Palm, while in order to give a sufficiency of new compost a pot at least 3 inches larger has to be used.

This, when already the pots are large, soon makes the plants unwieldy, and as there comes a time when further increase of size is undesirable, it becomes a question either of feeding liberally and watering very freely or breaking up the large specimens into several. There is a decided advantage in favour of the latter course, as the roots once liberated, the dead roots in the centre, and the scoured or worn-out soil, can be removed.

Not many *Cattleyas* have as yet been repotted, but the time is not far distant when a number must be taken in hand. In every case remove as much as possible of the old material, replace it with new, and if practicable bring the lead from the rim towards the centre when replacing in the new pots. Sometimes the removal of a few worthless, worn-out pseudo-bulbs will make room for this without greatly increasing the size of the pot.

Among *Dendrobiums*, too, the grower will be increasingly busy, and here again it is not advisable to greatly increase the rooting space. With the deciduous and long-stemmed species generally there is little increase in size yearly, and therefore if the compost is kept sweet and open the plants may remain in the same pot or basket for years. The time to repot is when the young growth is an inch or so long, and before it begins to root independently. These are a few of the principal Orchids now needing attention, but of course there are many others.—H. R. R.

THE RENOVATION OF OLD FRUIT TREES.

IF we were asked to describe the age in which we live, I suppose we could not reply more aptly than by terming it an age of progress, marked by a steady, persistent onward movement from imperfection towards perfection. In all parts of the industrial world this progressive advance may be readily noticed. We can trace the formation of newer and better things to replace the old, and the equally important contemporary process of the remoulding of old things to serve the purposes of modern times. For it must never be forgotten that in all branches of industrial economy, it is a judicious combination of old and new which is best able to meet the demands that are made upon it. In our own particular sphere in the vegetable kingdom, this generalisation is well borne out, and I am about to endeavour to deal with one phase of the alteration of the old to keep pace with the new.

The word renovate or to renew carries with it the idea of rejuvenating, of making young, and consequently healthy and vigorous, that which has apparently arrived at an age not generally associated either with health or vigour. We have probably all heard of the wonderful mill which was accredited with the power of grinding aged persons into young ones again, and probably, too, none of us was very far in years before we relegated the story of the Mill of Life to the category of fairy tales. Well, I do not intend to discuss the impossibility of making old fruit trees into young ones any more than I should think of arguing in support of the mythical "Mill of Life," but I hope to be able to show, that in the case of fruit trees at least, old age is not so incompatible with health and vigour as may be generally supposed. The title of this paper, therefore, will not sound strange or unfamiliar to the thoughtful gardener who may be spending much time in improving old things, not, I trust, without a fair amount of success.

The subject of fruit culture to the present up-to-date gardener and farmer savours sufficiently of pounds, shillings, and pence to recommend itself, and with them finds practical exposition either in the planting of young trees or in bringing back to a healthy fruit-bearing condition those which have been planted half a century or more. But it is sad to see in so many gardens and orchards large numbers of old trees that have enough vitality left in them to supply, if properly treated, fruit which would be highly valued and appreciated on any gentleman's table and that would fetch a good price in the market, lingering out a practically useless existence for the lack of proper treatment. There are few farms but have their orchards of Apple and Pear trees; but it is, I am sorry to say, the exception rather than the rule to find the old trees in a healthy fruiting condition. This should not be so, for not only is it quite possible to renew in these old trees their former fruit-bearing qualities, but the means by which this desirable result is to be attained are available to all. From a commercial point of view the neglect of old trees is false economy, for I maintain that no portion of a farm or garden gives such good returns as a well-cared for Apple and Pear plantation.

The question has often been asked, "Why do not farmers take up fruit growing to a greater extent than is at present the case?" This question has a twofold answer according to existing circumstances. In the first place, there are some farms without orchards, and many farmers hesitate to venture on an undertaking from which little return may be expected for ten or fifteen years, although much labour and attention have to be expended during the whole of that time. Under the conditions on which so many tenant farmers now hold their lands, it is scarcely to be expected that they would care to embark on such a lengthy enterprise; the matter is a question for the landlord rather than for the tenant.

In the second place there are, as I have already stated, many farms with orchards composed almost entirely of old trees in an apparently decaying condition. To perhaps the majority of people an improvement in the fruit-bearing properties of such trees would be considered an impossibility, and a purely passive attention only would be given them. For farmers, as a body, lack the requisite technical knowledge for managing fruit trees, and in too many cases they do not study even the elementary principles which underlie successful fruit culture.

From the foregoing it will have been gathered that the renovation of old fruit trees is not the impossible or difficult matter which many persons may consider it to be. The question which naturally arises is, "What is the process of renovation?" My own experience may form a partial and perhaps not altogether uninteresting answer.

It fell to my lot some twenty-five years ago to take charge of a garden which contained a number of old espalier trained trees of the type that our grandfathers were so fond of planting all round the walks of the kitchen gardens. These trees had no doubt borne when young a small quantity of useful fruit, but in the course of time from hard pruning and the most unnatural style of training had become subject to canker and disease, and consequently useless. What was to be done with them? They were neither useful nor ornamental. I did not want to dig them up, as they were old favourites planted by some member of my employer's family half a century before, and to head them down promised to prove a dangerous undertaking. However, I obtained

permission to operate on one as an experiment. The tree I purposed to head down was an old Ribston Pippin eaten up with canker, and what small quantity of fruit it bore was as diseased as the tree itself. All the side branches of this tree were sawn off close to the stem at about the end of February. By the middle of April I noticed a number of buds forming all up the old stem. Eventually the tree broke splendidly and made some healthy growths of from 2 to 3 feet long.

In the following winter these were thinned, the strongest only being retained, and these cut back to a sound wood bud, pointing in an outward direction. The fact of this old stump showing such signs of new life made it an interesting study to my employer to watch its

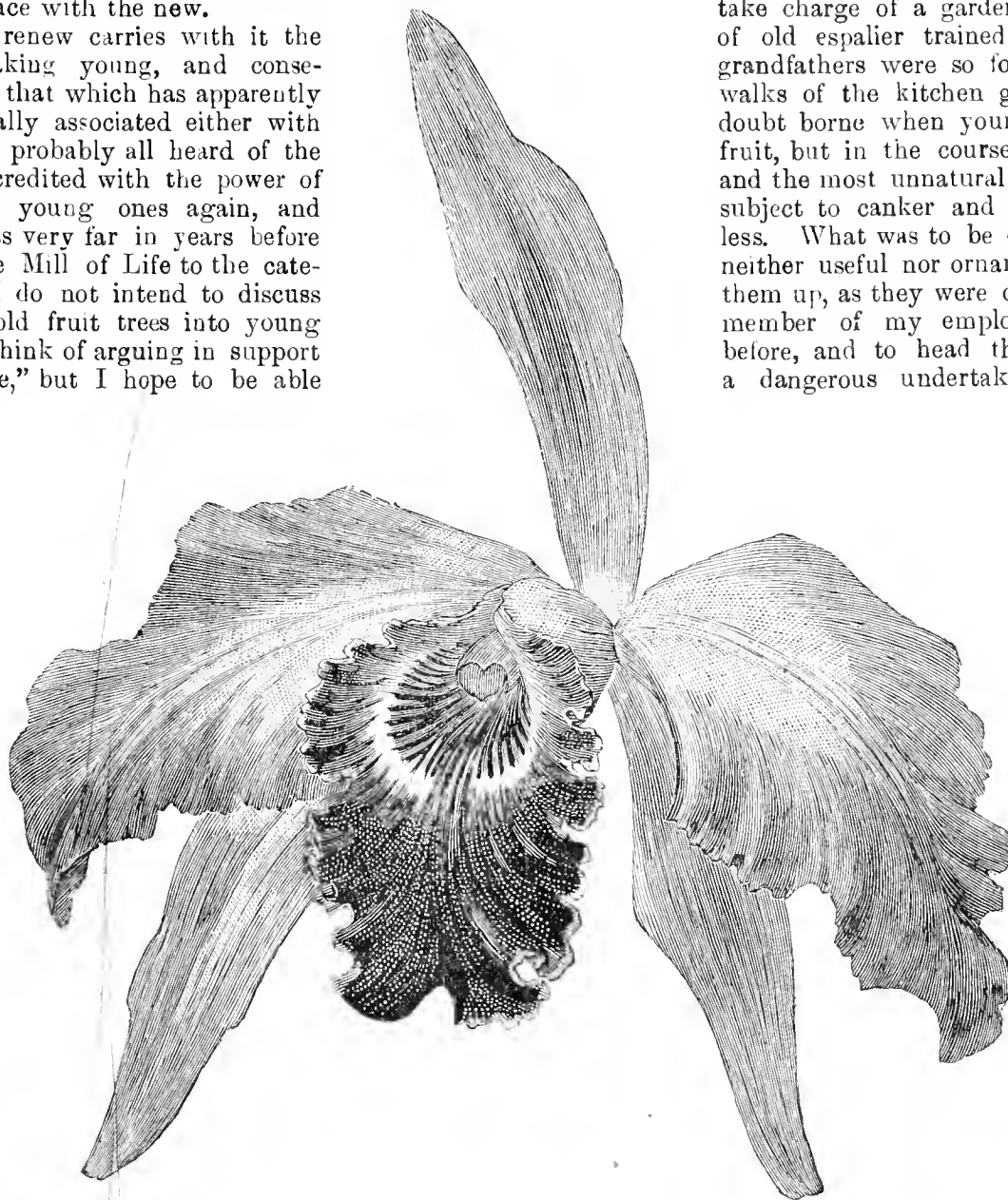


FIG. 51.—LÆLIA EDISSA.

progress, because to him it was a great surprise that such a development should have taken place in an old tree. In the second year the growths were quite as strong as in the first, and during this time the lower buds of the first year's growth were developing into fruit buds. In the third year we had some splendid fruit—clean, and of the finest quality, without a sign of canker or disease. From that time to the present the tree has never failed to bring a crop of fruit, and last season I gathered from it 9 bushels of Apples.

I need hardly say that after this experiment I had a free hand in dealing with old fruit trees. We have no old espaliers left now, but the garden is well stocked with healthy "youthful" bush trees of from fifty to 100 years old, and it is from these that we get some of our finest fruit. My experience has not been confined to the class of tree I have just described, as I have dealt similarly with standard Apple and Pear trees as well.

I have spoken of heading down old trees as part of the process of renovation. In doing this it is well to cut the forked branches as near as possible on the upper side of the fork. The cut should be made in a slanting direction, the edges be rounded off, and a thin coating of green paint brushed over the cut, so that rain may be carried off and decay prevented.

In the case of old trees of a variety not worth preserving—that is, bearing a class of fruit of an inferior quality to some more modern introductions—the better plan, if the old stems are healthy, would be

to cut down the old stock as previously advised, and regraft with some known good variety. A new tree will form much quicker than from a maiden tree.—(*Paper read before the Reading Gardeners' Association by Mr. T. NEVE, Sindlesham.*)

(To be continued.)

SEASONABLE HINTS ON FLORISTS' FLOWERS.

THE winter is now, we hope, past, and the variableness of the season is manifested by the conditions in which gardeners find themselves in different localities. In this south-east corner of England where in many years our roads have been completely blocked with snow, and our gardens hidden under its white mantle, we have had hardly any snow or frost though friends have written of their gardens being covered to a depth of from 6 to 10 inches. Our springs were dry, and we were wondering whether we were ever to have a full supply of water again. Now floods have supervened, the ditches are full to overflowing, and the cry is heard, "When shall we have dry weather again?" Of course this affects our gardens, and considerably puzzles those who are engaged in cultivating florists' flowers.

AURICULAS.

I am in a somewhat peculiar predicament as regards these flowers. I have given away many of my plants, and my collection is consequently much reduced. I cannot look after them as I used to do, and just at the present time a spring has burst in my pit, and there is about 6 inches of water, but as this has happened before without causing any particular damage I regard it philosophically. It is not much that the Auriculas require at this season of the year, for the old practice of top-dressing them has been wisely abandoned, as experience proved that the formation of the truss had been completed before this, and stimulation could be better applied in the form of liquid. One has only to stir the surface of the soil, remove all dead foliage, and give the pits and frames a slight fumigation.

One cannot touch upon the subject of Auriculas without lamenting the falling off in their culture. Our largest grower for sale in the south said to me the other day, "There are no Auriculas to be had anywhere," and although this may be perhaps a little beyond the mark, yet there is no doubt that the stock of them in the country is being gradually reduced. To one like myself this seems a sad condition of things; we get hardly any novelties, and when three or four of our present growers pass away it does not seem as if there were anyone to take their places.

CARNATIONS AND PICOTEEES.

The season has, I think, been a favourable one for these where they are wintered in pots, but it must have been trying for those planted in beds. Where an even temperature is maintained and the plants are kept free from damp they winter well. My own culture of these is confined mainly to the varieties raised by Mr. Martin R. Smith and Mr. Douglas, and they are now so widely raised from seed that there is far less trouble taken with them than there used to be. How anxiously one used to watch over the named varieties and guard them from the vicissitudes of temperature through which they had to pass. Here, again, there is little to be done but to keep the plants clean and the surface of the soil stirred, and where they are bloomed in pots everything now ought to be made ready for potting. The soil should consist of turfy loam, well-decayed manure, leaf mould and sand, mixed and placed under shelter, so that it can be used at any time.

GLADIOLI.

It will be well, if any favourable opportunity occur and the ground is in good condition, to fork the beds over and prepare them for planting towards the middle or end of the month. Here again the practice of growing named collections has been largely abandoned and seedlings are substituted for them. The most careful growers now fertilise their plants, and the forms obtained from hybridised seed are very different from those that used to be put on the market where no care had been taken in crossing, as these produced very inferior flowers.

RANUNCULUS.

The sodden state of the ground effectually prevents the planting of these tubers, but it is much better to wait than to plant under present conditions. How people would open their eyes if one of George Lightbody's catalogues of Ranunculus, where some are priced as high as 21s., were placed before them, and yet one's earliest association of that which was most beautiful in our garden is connected with the old Dutch varieties of this beautiful flower. There is no product of the garden in which greater variety of colour is to be seen, while the exquisitely modelled forms are sure to attract every lover of the beautiful.

ROSES.

As far as I can judge our Rose plants have come through the winter grandly; there have been no frosts sufficiently hard to injure them, and the shoots are strong and healthy. The pruning knife will now be called into requisition; Hybrid Perpetuals may be pruned early in March, and Teas and Hybrid Teas a little later. So much has been written on the subject of pruning, and so complete and accurate a treatise has been put forth by the National Rose Society, that no grower of Roses who wishes to prune his plants properly can plead ignorance as to what he should do. There is one golden rule which ought ever to be borne in mind: where you have to prune a weak variety use the knife freely, cutting down to two or three eyes, while in the case of the stronger growing varieties five or six may be left.—D., Deal.

LOTHIAN STOCKS.

No Stocks are more valuable for winter, spring, and summer decoration than are these. Sowing the seed in July and August has been frequently recommended, but I find, after many trials, that those periods are too late for producing the best display of which these sweet and massive flowers are capable.

It may be well to explain what I mean by the "best display"—I mean large plants of double white, purple, and scarlet Stocks in the depth of winter. It is easy to obtain Stocks in spring and summer, and even at those seasons they are beautiful when the plants are well grown; but they are far more attractive from November until April, and withal they are easily produced at that period. When the sowing of Lothian Stocks is deferred until July or August the plants do not flower until late in the following spring, continuing through the summer precisely when other Stocks are plentiful. The true Lothian Stock, it should be remembered, requires a longer period of growth before flowering than does the ordinary type of the Intermediate Stock; the Lothian also lasts considerably longer after it commences flowering than the Intermediate—indeed, longer than does any other Stock in cultivation.

Seed sown in February or early in March produces plants which, if well managed, commence flowering about July, and continue until destroyed by frost. Such plants make most effective beds in the flower garden—beds as decided in their beauty and lasting as long as any other "bedding plants." As thus managed Lothian Stocks are very valuable. July and August sowings, as has been mentioned, produce plants which flower in spring, lasting also a considerable time; but the time of sowing for producing the best display I have found to be April, say, for the purpose of fixing it on the memory, on All Fool's day. By sowing at that time I have had plants in 8-inch pots—plants 18 inches high and about as much in diameter, perfect masses of double white and scarlet flowers (the purple is not so effective during winter) at Christmas and onwards until April. It is not necessary to dwell on the value of such plants for affording an abundant supply of cut flowers of the first order of merit, neither is a laboured eulogium necessary as to the commanding effect of the plants in the conservatory. At their period of flowering few plants can equal them.

My plan of raising the plants is to form a bed of leaves and litter about 2 feet high, nail four boards together to form a rude frame, and cover the bed with frame lights. Four or 5 inches of soil is placed on the bed, and in this the seed is sown thinly, very thinly, in drills. The plants are thinned to an inch or more apart as soon as they can be handled, and the glass is removed entirely during favourable weather. About the middle or towards the end of May the plants are very sturdy, and are placed into small pots just vacated by bedding plants. In these small pots the plants remain until they show flowers, when the spike of each double flower is cut off. Side shoots speedily grow, and as soon as these are seen the plants are potted firmly in rich soil in their flowering pots. These are placed on a hard bottom so that the roots cannot penetrate into the ground to any great extent, and a little litter is placed between the pots to aid in keeping the roots cool and moist.

The plants are subsequently treated as to watering the same as are Chrysanthemums, giving them liquid manure occasionally. They commence flowering in October, and an inch of the surface soil is removed from the pots and replaced with a rich top-dressing, after the manner of surface-dressing fruit trees in pots. The plants are then placed under glass in a minimum temperature of 45° to 40°. They flower splendidly all the winter.

This is the best way that I know of producing a fine display of Lothian Stocks. The plan is applicable to most gardens, and when plants are well grown they are worthy of a place in the choicest collection of conservatory plants during the winter months.—W. J.



Recent Weather in London.—The weather has, in the main, during the past few days, been dry and dull, with cold winds and occasional glimpses of welcome sunshine. On Sunday and Monday snow threatened more than once, but scarcely any fell. On Tuesday morning a cold drizzle fell for a short time. On Wednesday morning it was clear and very cold.

Weather in the North.—February closed with cold easterly winds, but a gradual tendency to drier weather. The first few days of March were fine, with a good deal of brilliant sunshine. On the morning of the 2nd 8° of frost, and on that of the 4th 5° were recorded, and there was again a sharp touch on Monday, the day being duller but pleasant.—B. D., *S. Perthshire*.

Apple Hollandbury.—I note the reply to a correspondent regarding this Apple. We have one tree of it planted with many more for trial purposes. It has fruited freely enough the last ten years, but the colour has never been what it ought to be. In every other respect, even to the habit of growth, this tree corresponds with what is said of the variety. The want of colour in the fruit appears the more inexplicable when I know that all other varieties colour profusely when growing in the same soil.—E. MOLYNEUX.

Isle of Wight.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. The chair was taken by Mr. J. L. Mitchell. Mr. S. Heaton gave a practical demonstration in the "Pruning of Fruit Trees," showing how it should be done, and how it should not be done. The objects of pruning, the methods of pruning, and the seasons of pruning were dealt with at length, with the result that the subsequent discussion proved most interesting and profitable. A capital meeting was brought to a close by the election of several new members, and votes of thanks to the lecturer and chairman.

Chinese Primulas from Wem.—The name of Mr. Henry Eckford of Wem, in Shropshire, has become so intimately connected with Sweet Peas, that many people have taken the impression that to these plants alone the veteran horticulturist devotes his energies. This, however, is by no means the case, as the several excellent culinary Peas that have come from Wem go far to prove. But we must go much farther than this if we would enumerate all the plants that have been subjected to his attention. This cannot now be done, and we must be content with calling attention to the strain of Chinese Primulas, of which Mr. Eckford has favoured us with some examples. These have size, substance, and are beautifully fimbriated, while the colours are sufficiently distinct and attractive to insure general admiration.

London Open Spaces.—At a recent meeting of the Metropolitan Public Gardens Association, the draft final report of the Hampstead Heath (Golder's Hill) Extension Committee was submitted, and it was stated that with the conveyance of the estate to the London County Council at the end of last year the work of the Committee had been successfully completed, and that the small balance in hand would be devoted to a fund for the purchase of another addition to the Heath. The London County Council General Powers Bill was considered, and it was decided to oppose that part of it which proposed to give power to the Battersea Vestry to appropriate the Latchmere Garden allotment land, 11 acres in extent, to turn out the allotment holders, and to utilise the greater part of the site for building purposes. A letter was read from the Board of Agriculture enclosing a copy of the scheme for the preservation and management of Petersham Common, which embodied some of the suggestions made by the Association. It was reported that Christ Church (Blackfriars Road) churchyard had at length been transferred to the St. Saviour's Board of Works, and that the Association had commenced laying it out. An intimation was received from the Camberwell Vestry accepting the offer of the Association to lay out a recreation ground in Sumner Road, and it was agreed to put the work in hand as soon as possible.

The Royal Gardeners' Orphan Fund. At a meeting of the Committee of this Fund, held on the 2nd inst., Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, was unanimously elected Chairman in succession to Mr. Wm. Marshall.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, March 13th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on "The Evolution of Plants, illustrated by various garden strains coming true from seed," will be given at three o'clock by Mr. R. Irwin Lynch.

Anthurium Scherzerianum Saersii.—On the occasion of a visit recently paid to the gardens of the Chief Secretary for Ireland, over which Mr. G. Sayers presides, he showed me a form of *Anthurium Scherzerianum* named *Saersii*, which is practically a continuous flowerer for at least four months each year. The plant was carrying eight spathes; the length of the largest was 7 inches, and the width 3½ inches.—A. O'NEILL.

Certificates for Chrysanthemums.—At a recent meeting of the Floral Committee of the National Chrysanthemum Society it was decided to adopt a new method in granting certificates. In future novelties submitted will be judged by points, and in the case of cut blooms 18 points will be the maximum. The properties are divided as follows:—Breadth, depth, form, solidity, colour and finish, each of which may receive a maximum of 3 points. There will be three kinds of awards—viz., 1, first-class certificates for varieties that obtain 15 points or more; 2, awards of merit for those that gain 12 to 15 points; and 3, commendations for such as may get 9 to 12 points.

Measurements of Leeks.—The great interest manifested in the growing and showing of Leeks in the North of England is scarcely comprehended in the South where no special pains are taken in producing them in the great majority of gardens. If Leeks were not made a subject of study and earnest cultural effort in most northern gardens, a table of cubic measurements of examples of various sizes would scarcely have been required. Such a table, however, is provided by Mr. John Wear, Felton Mills, Northumberland. On a card a little more than 6 inches square, may be seen at a glance the cubic contents of more than 500 different sized Leeks. The contents of the smallest example in the table (6 inches long by 3 in circumference) is shown as 4.30 cubic inches and the largest (12 inches long by 8 in circumference) given as 61.12 cubic inches. Mr. Wear has certainly been very diligent, and his ready reckoner will doubtless be in demand in Leek growing districts, where a large number of cultivators exhibit the products of their skill at special shows of their favourite vegetable, though we do not know that there are classes for what may be termed the smaller fry in the table before us.

Winter Greens.—Nearly all descriptions of Winter Greens are rapidly becoming scarce. What with the great check given to summer growth by the drought of last season, the excessive attacks of aphids, which followed, and later the effects of severe frosts, stocks were far from plentiful, even before Christmas, and hard cutting of what was alive since has greatly thinned the crops. The best and cleanest of greenstuffs in the market just now, of home grown kinds, is Chou de Milan, or the strong-growing Hundredheads, which is one of the hardiest and most valuable of all the late white Kales. There is a fair supply of what are probably Cornish white Broccolis, very solid and tender, but these are of course expensive, costing 3d. and 4d. per head. Where there were good stocks of Ellam's and similar early Cabbages put out in September there should, provided they have escaped harm, be good material for cutting shortly. But where there are none it seems very likely that there must soon be a great scarcity of greenstuffs. It seems early to write about catch crops, as these are usually advised to be sown or otherwise prepared in the autumn. But none too early is it on warm borders to sow Spinach, Early Milan Turnip, Early Gem Carrot in a frame, and to get if possible strong Cabbage plants to put out close together for early cutting as Greens. Well favoured are the gardeners who have raised from seeds sown several weeks since plenty of strong young plants of Snowball Cauliflower, and in a frame dibbled out in October, or from a September sowing, plenty of good stout Cabbage plants. Some early sown Chelsea Gem Peas on a warm border also will come in helpful at a critical time, when other things are running short. No vegetable more greatly assists the gardener than does Seakale when roots for blanching are abundant.—OBSERVER.

The Royal Meteorological Society.—As this Society will attain its jubilee on Tuesday, April 3rd, having been founded on April 3rd, 1850, it is proposed to observe this fiftieth anniversary in a special manner. The Council have arranged for a commemoration meeting to be held at 3 P.M. at the Institution of Civil Engineers, at which the President will deliver an address, and delegates from other societies will be received. In the evening a conversazione will be held at the Royal Institute of Painters in Water Colours. On the following day, April 4th, the Fellows will visit the Royal Observatory, Greenwich, and in the evening will dine together at the Westminster Palace Hotel. In view of this jubilee celebration, Mr. G. J. Symons, F.R.S., was elected President at the annual meeting of the Society on January 17th, but owing to illness he has since been obliged to resign this office. Under these circumstances the Council at their last meeting appointed Dr. C. Theodore Williams as the President of the Society.

Liverpool National Amateur Gardeners' Association.—The oldest inhabitant of our city cannot remember such intense excitement as prevailed when the relief of Ladysmith became known. At the Common Hall, Hackins Hey, from multitudes of excited people the amateurs of both sexes had mustered in fairly good numbers. The paucity of exhibits was not to be wondered at, considering the spell of bad weather through which we have passed. After the newly elected Secretary, Mr. McGregor, had got his work well in hand and the Judges had completed their labours, the newly elected President, Mr. A. W. Ardran, gave one of his timely addresses. Speaking of the value of their Association as a means of mutual improvement, he remarked that gardening possessed claims such as nothing else could, and it was a remarkable fact that any particular hobby in it was oftentimes handed down in families for generations. Many failures amongst amateurs simply arose through not seeking information through the gardening press, or from an association such as theirs. The medals for points were distributed, Mrs. McGregor gaining the silver and Mr. Cangle the bronze, whilst Mr. H. A. Robins gained the certificate. The usual votes closed a most interesting meeting.—R. P. R.

Chester Paxton Society.—A meeting of this Society was held at the Grosvenor Museum on Saturday, when by special request the Honorary Secretary, Mr. G. P. Miln, delivered a lecture on the "Artificial Cross-Fertilisation of Cereals and Grasses." Although one of the objects of this Society when first started was to encourage agricultural as well as horticultural research, this is the first lecture on a purely agricultural subject that has yet been delivered to the members. Mr. Miln prefaced his remarks by giving some interesting particulars of the improvements that have taken place in the breeds of horses, cattle, and sheep during the present century, and which have led to such beneficial results to British agriculture. It was not, however, until quite recently that actual new breeds of farm plants had been produced by means of artificial cross-fertilisation. The lecturer explained in detail the methods adopted in securing improved breeds by the means of artificial cross-fertilisation, and stated that to the agriculturist "plant breeding" was almost as of great importance as was the judicious stock-breeding of horses, cattle and sheep. The lecture was copiously illustrated by a series of specially prepared lantern slides, which embraced all the reproductive organs of plants as well as comparative results between some of the old and the new breeds of cereals and grasses. Added interest was given to the meeting by an excellent collection of some two dozen varieties of Apples staged by Mr. N. F. Barnes, Eaton Gardens. Votes of thanks to Mr. Miln for his lecture and to Mr. Barnes for his exhibit brought the meeting to a close.

February Weather at Dowlais.—Total fall, rain and snow, 9.54 inches; deepest snowfall, 14 inches on the 13th, and 9 inches on the 10th and 14th. Snow fell on eight days to a total depth of 36.10 inches. Rain fell on twelve days. Heaviest fall 2.35 inches. The fall registered in five days from the 13th was 6.19 inches. Temperatures—Mean maximum, 37.857°; highest reading, 49° on the 25th, and below 32° on seven days. Mean minimum, 26.321°; lowest reading, 12° on the 6th and 12th. Below freezing point twenty-one nights. Mean in sun, 50.285°; highest reading, 75° on the 7th. Sunless days ten. The prevailing direction of the wind was N.E. and E. A very rough month throughout, especially on the night of the 13th, when a terrible blizzard commenced about 5 P.M., and was raging until 5 A.M. the following morning, the drifts of snow in some places being several feet.—WM. MABBOTT.

Sussex Weather.—The total rainfall at Abbot's Leigh, Hayward's Heath, the past month was 5.59 inches, being 3.60 inches above the average. The heaviest fall was 1.48 inch on 15th. Rain or snow fell on twenty days. The maximum temperature was 57° on the 24th and 26th; the minimum 16° on the 10th. Mean maximum 43.18°; mean minimum 32.22°; mean temperature 37.70, the average. A thorough "February fill dyke," as they say in Yorkshire. March has come in very cold but dryer.—R. I.

February Weather at Hodsock Priory, Worksop.—Mean temperature of the month 36.2°. Maximum in the screen, 58.0° on the 23rd; minimum in the screen, 13.4° on the 13th; minimum on the grass, 6.3° on the 8th. Number of frosts in the shade 17, on the grass 22. Sunshine 60 hours, or 22 per cent. of the possible duration. Rainfall 3.94 ins.; difference from average + 2.28. Rain fell on eighteen days; maximum fall, 0.97 in. on the 15th. Rain from January 1st 6.87 ins.; difference from average + 3.41. The wettest February for at least twenty-five years, probably for forty-five years. Sharp frosts in the first half of the month and deep snow.—J. MALLENDER.

February Weather at Belvoir Castle, Grantham.—The wind was in a southerly direction fifteen days. The total rainfall was 4.04 inches; this fell on twenty-one days, and is 2.23 inches above the average for the month; the greatest daily fall was 0.52 inch (snow) on the 15th. Barometer (corrected and reduced): highest reading 30.066 inches on the 8th at 9 A.M.; lowest 28.460 inches on the 19th at 9 A.M. Thermometers: highest in the shade 56° on the 23rd, lowest 10° on the 8th. Mean of daily maxima 41.14°, mean of daily minima 30.14°; mean temperature of the month 35.64, lowest on the grass 8° on the 8th, 12th, and 13th, highest in the sun 97° on the 18th and 23rd; mean temperature of the earth at 3 feet 37.60°. Total sunshine sixty-seven hours forty-five minutes, which is sixteen hours below the average for the month; there were nine sunless days. The rainfall is the largest in February since 1876, previous to which the records are imperfect.—W. H. DIVERS.

A Wet February.—The old saying "February fill dyke" must have originated in some such year as this. As a rule the month is one of the driest of the whole year, and in the South of England it is exceeded in this respect only by its successor, March. Every now and then, however, it is distinguished, says a contemporary, as in the present year, by heavy snows, followed by drenching rains, a very fruitful source of floods, as many previous records show. Last month was certainly one of the wettest Februaries we have ever had. Over a very considerable part of England the amount of rain and snow combined was at least half as much again as the average, and in many places it was at least twice as much as the normal. In London (at Brixton), where the total rainfall amounted to as much as 3.8 inches, the aggregate was nearly two and a half times as much as the average, and was the largest recorded in February since the year 1879. At Greenwich, where the total for the month amounted to all but 3½ inches, a long record extending back for sixty years gives only two instances of so wet a February, one of these occurring in 1879, when the total was 3.8 inches, and the other in 1866, when it was just over 4 inches.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900. February and March.										
Sunday.. 25	S.S.W.	deg. 50.9	deg. 50.3	deg. 55.5	deg. 49.1	ins. 0.07	deg. 45.5	deg. 42.3	deg. 42.1	deg. 45.0
Monday.. 26	S.E.	47.3	46.9	57.5	44.8	0.28	46.1	43.5	42.6	44.1
Tuesday 27	N.W.	47.5	46.9	49.4	46.6	0.13	46.3	44.1	42.9	41.9
Wednesday 28	N.E.	42.2	41.5	42.5	41.9	0.04	46.3	44.5	43.5	40.2
Thursday 1	N.E.	38.8	35.0	41.6	36.7	0.01	43.6	44.5	43.8	33.5
Friday .. 2	N.N.W.	38.1	36.5	42.2	31.8	0.02	41.1	43.6	44.1	22.6
Saturday 3	N.W.	39.0	36.8	43.0	35.9	0.01	40.9	42.9	44.1	30.4
MEANS ..		43.4	42.0	47.4	41.0	Total 0.56	44.3	43.6	43.3	36.8

A dull, sunless week, with cold northerly winds and showers, at intervals.

STOPPING VINES.

"A. J." (page 182) in my opinion commits an error in not pruning his young Vines nearer the base than 18 inches. If he would prune them to within two eyes of the base, allowing both shoots to grow for a time, until he can be certain that the basal growth is free from slug or other insect attacks, and then remove the second shoot, he would find at the end of the season's growth a stronger cane. Under this treatment there is no need to retain a second growth for encouragement to the leader, as is his practice. In the future he would find the cane stronger near the base than is the case where pruned to within 18 inches of the soil. It is the stout basal growth that should be encouraged the first year as a foundation for future greatness. If "A. J.'s" intention is to establish Vines to give annual heavy crops of fruit for say twenty-five years, I should advise him to cut the leader harder back than to within 4 feet as advised. My experience is, Keep the rods well back the first two or three years until they gain strength. I have seen many young Vines left with 6 feet of leader with a view to cover their allotted roof space in a short time. Such Vines nearly always exhibit weak places in the rods, and if they do not swell regularly, no after treatment will bring about that equality of rod thickness which is so desirable, not only for appearance, but for a full crop of high-class Grapes.—E. MOLYNEUX.

PRIMULA KEWENSIS.

No doubt it is somewhat imprudent, if not impertinent, to suggest that anything emanating from the Royal Gardens, Kew, merits adverse criticism. But I was not alone at the Drill Hall on the 27th ult. in thinking that the giving of so specific a name for a large flowered variety of *Primula floribunda*, as the above designation is, was rather premature. When Kew says that the plant was the product of crossing *P. floribunda* with *P. verticillata*, of course no one should dispute it. But still, even the most willing believer likes to see some tangible evidence of the cross in the result. In this case the plant was simply a *P. floribunda* in every respect and no more, not the least evidence of the potency of the *verticillata* parentage being visible. Naturally it looked fine when compared with a poor specimen of *floribunda*. I should have thought, coming as the plant did from our great Botanic Garden, that it would have been so much better to have called it *Primula floribunda grandiflora*, which it is, than by the specific name of *kewensis*. What if it seeds, and in that way reproduces *floribunda* after all? Where will the new appellation come in then? Oddly enough no family of plants seems to have been less responsive to the efforts of hybridists than has that of the *Primula*. Even the assumed crosses of *P. obconica* and of *P. sinensis* leave ample room for doubt. Ordinary growers of the former species find with constant selection that considerable variation in flowers and leaves result, but there are in such cases no suspicions of intercrossing.—SCRUTATOR.

SPRING SPRAYING.

HAVING been asked by several gardeners if I had done my spring spraying yet, I think it may interest others to learn the results of that done last March, when I used nearly 1000 gallons of mixture on 2000 fruit trees. These we have just finished pruning, and they look very well. The boughs are a beautiful deep healthy green, clothed with plump fruit buds, promising a fine crop. The moss and lichen have quite gone. The mixture used for spraying was caustic soda 5 lbs. (Greenbank's 98 per cent.), pearlash 5 lbs. Dissolve the caustic soda carefully in boiling water. Pearlash will dissolve in cold water, but I prefer hot, as it is quieter in its action. Add these together, and put them into 50 gallons of rain water. In small gardens this mixture can be applied with a syringe, but in large orchards a sprayer is best.

I claim another great merit for this mixture—viz., it destroys the codlin moth (*Carpocapsa pomonella*). My trees have suffered much from it in the past. Bushels of fruit have prematurely fallen, but last season the dreaded foe did us no harm. So convinced am I that this blessing resulted from my caustic spray, that I intend to give the trees another dressing with it this year about the middle of March. On 1st May, 1899, I tried a stronger solution than the above—viz., 2 lbs. caustic soda and 2 lbs. pearlash to 5 gallons of water, with the result that the trees looked very unhappy all the summer, and this winter I have taken their heads off. To use the mixture at this strength is wasteful and dangerous.

Another good mixture for spraying trees at any time when in growth is given by Mr. L. H. Bailey in his "Principles of Fruit Growing,"—viz., 1 lb. of Paris green to 200 gallons of water. This is a serviceable wash. To it may be usefully added 2 lbs. of lime. Or a pound of Paris green may be added to 200 gallons of Bordeaux mixture. If the Paris green be made into a paste with a little water it mixes better in the barrel. For the blue-head caterpillar, or figure 8 moth, I used with success 2 ozs. of softsoap, and one-third pint of nicotine in a gallon of water. This is cheap and effective.—JNO. MILES, Southampton.

FROZEN WATER PIPES.

I THINK that if I state the fact "That 9 cubic inches of water becomes when frozen 10 cubic inches of ice," readers who may not be already convinced by the arguments which have already been brought forward will be able to see that if a pipe is already full of water, it must break if it cannot expand, to make room for every 10 inches to replace the 9 inches. But if there should happen to be room in a pipe for the 10 to replace the 9, there would certainly be no danger when every 10 cubic inches was again replaced with the 9 cubic inches of water in the thawing.—J. L. W.

DECADENCE IN WALL TREES.

I AM afraid that one of the reasons of the bad training of the present day is not so much the want of knowledge as the lack of time; the garden staff, as a rule, is not strong enough for a man to devote sufficient time to the fruit trees. When the gardening account has to show a balance in hand there is often something which is not done, either when or how it should be. If fruit trees are to be trained straight and at correct distances, the young shoots must have attention in the summer as well as winter. As regards the unfruitfulness of wall trees which is apparent in large as well as small gardens, even after good training has been bestowed upon them, overcrowding of spurs and want of sufficient support are two of the principal causes. I speak from experience, as I have brought old unfruitful trees back to fruitfulness by thinning and feeding.—J. L. W.

BIRDS AND BUDS.

I SYMPATHISE heartily with Mr. Kneller in the trouble he has with wild birds, which is not his alone, as I have heard of others in certain districts where trees and birds abound, and they are as rigidly preserved under the influence of modern sentimentalism as are pheasants and hares. Therein do we see one of the strange inconsistencies of humanity, for whilst the very persons who refuse to allow a sparrow or a tomtit to be shot in a garden, where they are doing immense harm, will yet take part in a battue and glory in having shot their hundreds of half tame, harmless pheasants. Personally, I would not shoot a bird or animal of any description except to convert it into useful food, or even harm any insect except to protect myself from its depredations.

My inoffensive action, however, towards all things living must not prevent me from holding that when wild birds commit such depredations in gardens as they did at Malshanger, that they should be destroyed. Why tolerate birds to do such enormous harm to our fruit crops, when we destroy rats wholesale when they prey upon our corn stacks? Are not rats as worthy of some sentimental protection as devouring birds? The law, through the County Councils is showing itself to be on this matter a "hass," and is only giving these birds liberty to prey upon and devour our fruit crops. What nonsense is it to be crying after more home-grown fruit, and yet protect by the law some of the greatest enemies to fruit culture we have in birds.—A. D.

JUDGES AND JUDGING.

WHEN "An Inquisitor" (page 179) undertakes to call into question the practice of employing judges to act as such in connection with the same classes or departments at shows successively, he should realise that generally the practice has worked well, and that in indicting the practice it is his duty to set out his reasons for such objections. But in the present case he indicts the practice without presenting any reasons or grounds, and invites others to defend a practice that, so far as I can perceive from his article, needed no defending. What does he say to the practice in relation to Chrysanthemum shows, where the same men judge the same classes year after year with good results? Does he suggest that Orchid men or Rose men, or vegetable or fruit men, should be put on to such duties? The same thing applies to Roses, Dahlias, Carnations, to fruit or vegetables, or to any other special exhibition section in flower shows.

Judges are usually selected by exhibition committees because of known reputation in relation to certain sections of horticulture. One man is well up with plants, another with florists' flowers, another with table decorations, yet others with fruit and vegetables, and so on. No doubt most of these men could judge in other classes, but everyone familiar with shows knows how great is the risk attendant upon putting round men into square holes. When we see the same men engaged year after year by the same committees, certainly conclusive proof is afforded that such executives are entirely satisfied. It should not be assumed that such selection takes place in defiance of exhibitors' wishes, as committees are usually quick to act when they find exhibitors have good ground for complaint. I do not see that "An Inquisitor" has any cause to fear others' wrath, but at least he might have started the subject by giving his reasons.—A. KINGSTON.



SOME OF THE BEST NEW ROSES.

I PROMISED on page 132 to enumerate a few of the newer Roses, and can conscientiously say that all of those named below are decided acquisitions to our already long list of superb varieties.

Ulster.—This is a grandly formed flower of great substance. I have seen it on several occasions, and flowered it last summer. It is a robust variety, free-flowering, after the form of Lady Mary Fitzwilliam, and sweet scented. Unfortunately its colour is scarcely so clear a salmon pink as one might desire, and it is more subject to mildew than most. It won a gold medal of the N.R.S. in 1898.

Mrs. Edward Mawley.—There can be no two opinions as to the beauty of this new Rose, which also secured a gold medal from the N.R.S. For form and size it is perfect, and the plant is very free-flowering. In the N.R.S. catalogue it is given as high-centred and imbricated; pink, tinted with carmine, and moderately vigorous.

White Maman Cochet.—All Rose growers know Maman Cochet, and I need only say that this sport from it is a counterpart in every way except in being white with a slight tinge of lemon.

Bessie Brown.—This will take rank as one of the very best Hybrid Teas. It is a creamy white, quite distinct, and when I first saw it at the Crystal Palace some four years or so back, I noted it as the best in a box of new Roses, and find it on my notes as "an improved Lady M. Fitzwilliam, but lighter." It is quite a distinct grower, and of perfect form. Not only did this Rose secure a gold medal as a new variety, but one of the silver medals as the best bloom among Hybrid Teas in the exhibition of the N.R.S. held at Bath in 1898.

Sunrise.—This variety gives us one of the prettiest of garden decorative Roses, and it has a most exquisite scent. It is doubtful if there is a freer grower and bloomer. For forcing it is most useful, and it is sure to be in much request. The colour is a peculiar reddish carmine shaded with salmon and fawn yellow. It is very pretty in the bud, and with deep bronzy foliage. This was the only gold medal Rose of last year.

Mrs. Cocker.—I believe this is a seedling from Madame Gabrielle Luizet and Baroness Rothschild. It is a beautiful soft pink, very high centred, grand in petal, and full. One of the most distinct and useful of all pink Roses.

Admiral Dewey.—This will be welcome as a pale pink sport from such a grand variety as Caroline Testout, which it resembles in all but colour.

Psyche.—We saw this at the Crystal Palace in 1899. It is a pale rosy pink, very small flowers, somewhat after a Crimson Rambler in growth, and likely to be a good companion to that variety.

Papa Lambert.—This has a very large flower, is sweetly scented, pinkish rose, with deeper centre, and is likely to prove one of our best Hybrid Teas for pot work.

Maid of Honour.—This is another of the good sports from Catherine Mermet, and may be briefly described as an improved Bridesmaid, its deep pink being very rich and glowing. This is sure to take a place in every collection, however small.

Madame Lucille Coulon.—This is a peculiarly coloured Rose, being rosy flesh with a distinct shade of copper and gold. A good grower, and very free blooming.

Billiard et Barre.—This is a golden yellow, charming in the bud stage, and filling out to a large flower.—PRACTICE.

BRUGMANSIAS.

HALF a century ago these were amongst the most popular plants of the greenhouse, but doubtless they have had to give way to modern, if not more attractive introductions. I have a vivid recollection of my first acquaintance with either *B. arborea* or *B. suaveolens* (the two varieties are considered as synonymous by some, but the distinction consists in the flowers of the former being less fragrant than those of *B. suaveolens*; moreover, in the former the flower has long tails attached to the corolla lobes, whilst in the latter there is hardly any prolongation of the segments) some fifty years ago in the shape of two fine old specimens of the varieties in question growing in the centre bed in a large conservatory at Sarsden House, near Chipping Norton, Oxon, then the seat of the late Mr. J. H. Langston, M.P. The specimens were the first my juvenile eyes had ever seen, and my father's respected old friend, the late Mr. John Greenshields, the gardener, took considerable pride in the veterans. Since then I have occasionally met with similar, and even finer specimens, growing in large tubs, boxes, and planted in the border, but not to the extent their merits

deserve. For certain decorative effects the cut flowers lend themselves admirably, and also keep fresh for several days in water if cut before they are quite expanded.

B. suaveolens is sometimes called the Angel's Trumpet Plant; the flowers are somewhat larger and longer than those of *arborea*, and measure sometimes over 12 inches in length, and the perfume is exceedingly strong. The flowers of *B. arborea* grow from 6 inches to 9 inches in length only, and the plant is naturally somewhat taller than that of *suaveolens*, though the distinction may be considered as hair-splitting, similar to the two generic names of the plant—viz., *Brugmansia* and *Datura*, and botanists aver there is no material difference between these species. *Brugmansias*, however, are all shrubby plants, and *Daturas* are nearly all annuals. Strictly, there are only three shrubby species—viz., *B. sanguinea* or *bicolor*, a native of Peru; *B. arborea*, also from Peru; and *B. suaveolens*, a native of Mexico principally, yet occasionally found further south. There are several supposed varieties, but these are made synonymous with the three species mentioned. The more commonly grown species in our gardens is *B. Knighti*, a double petalled kind. It possesses a sturdier habit, and is admirably adapted either for pots in the greenhouse, or sub-tropical bedding. There is also a variety of *B. sanguinea* called *flava*, the flowers being completely yellow, but it is somewhat rare.

In outward aspect the *Brugmansias* are not to be distinguished from the *Daturas* by the casual eye, as the flowers have much the same appearance. Formerly, indeed, no distinction was made between them, the name *Datura* covering all. Gradually a more rigid line was drawn by botanists, and they were differentiated into two entirely distinct genera. This separation was based upon the characteristics of the fruit and not upon those of the flower. The fruit in the *Brugmansia* is smooth, and has a tendency to subdivide into two cells, while the fruit of *Daturas* is spinous and subdivides into four cells. *Brugmansias*, moreover, have a shrubby habit. The properties of both, like those of the *Nicotianas* and the *Henbanes*, are acrid, and in many cases poisonous. The near relatives of the *Brugmansias* which, if not indigenous, have become acclimatised in these islands, are the Deadly Nightshade, the Thorn Apple, and the Black Henbane. All of these have a doubtful reputation and are not usually suspected of being allied to those other very popular members of the order *Solanaceæ*—to wit, the Potato, the Tobacco, and that ever-growing favourite, the Tomato. An interesting order surely is this of the *Solanaceæ*, which comprises so many plants of an ornamental, useful, and dangerous character.

For some reason the name *Brugmansia* has been given to certain parasitical plants allied to the giant *Rafflesias*, which stand far apart from the *Solanaceæ*, and cannot be regarded as having so high an organisation.—W. GARDINER.

TOMATOES.

SEEDS for producing the main crop of Tomatoes, either under glass or outdoors, ought now to be sown, so as to have plants strong and vigorous for the final potting or planting out. The seeds can be sown thinly in pots in any light sandy soil. If the seedlings are crowded they will be weakly from the commencement, which causes delay in pricking out the young plants. In a temperature of 60° to 65° seeds germinate quickly. Immediately this has taken place elevate the pot or pan containing them close to the light in the same temperature, thinning out the crowded seedlings. The next proceeding consists in transplanting them from the seed pots to others, placing them round the edge, three plants to a 3-inch pot, or if smaller pots are used one in the centre. Sink the seedlings so that the stems, hitherto exposed, are buried to the seed leaves. A light mixture of loam, leaf soil, and sand is the best compost. Use it in a moist condition, and stand the pots on a warm sunny shelf, affording no shading. Water sparingly in the first instance, but when growth is in active operation frequent attention will be necessary, especially in sunny weather.

On these plants becoming strong and the roots fairly numerous, move into 4½ or 5-inch pots. Drain the pots moderately and work the soil firmly about the roots. Stand them again on a shelf in a heated house to encourage rooting, but when fairly started remove to a similar position in a cool house with plenty of ventilation, as the plants must not be allowed to be drawn up weakly by even a day's neglect. Gentle heat, plenty of air and sunshine, adequate moisture at the root, and a moderately dry atmosphere are the indispensable conditions for insuring strong plants. Such will soon commence to produce flower trusses, and if they do flower and set a few fruits prior to the final potting or planting out, it will be an advantage rather than otherwise. They must not, however, receive a check by retaining them too long in the pots to enable them to flower. It is necessary to transfer them to their fruiting quarters before they become root-bound. When the roots mat themselves round the ball of soil in search of fresh food, the growth of stem and foliage proceeds, but it is of a very weak character, hence the importance of finally potting or planting in good time, when this difficulty is obviated.

The right condition of the plants for the final shift having been pointed out, a brief discussion on the best positions for planting under glass may be helpful to some. The best and most profitable crops are to be obtained from plants which can be set out on a stone

Tomatoes may be planted on mounds of soil in the centre border, where there will be room for a good length of stem to be trained to a perpendicular stake. Tomatoes on side stages should be attached to wires under the roof. The plants may be arranged a foot apart,

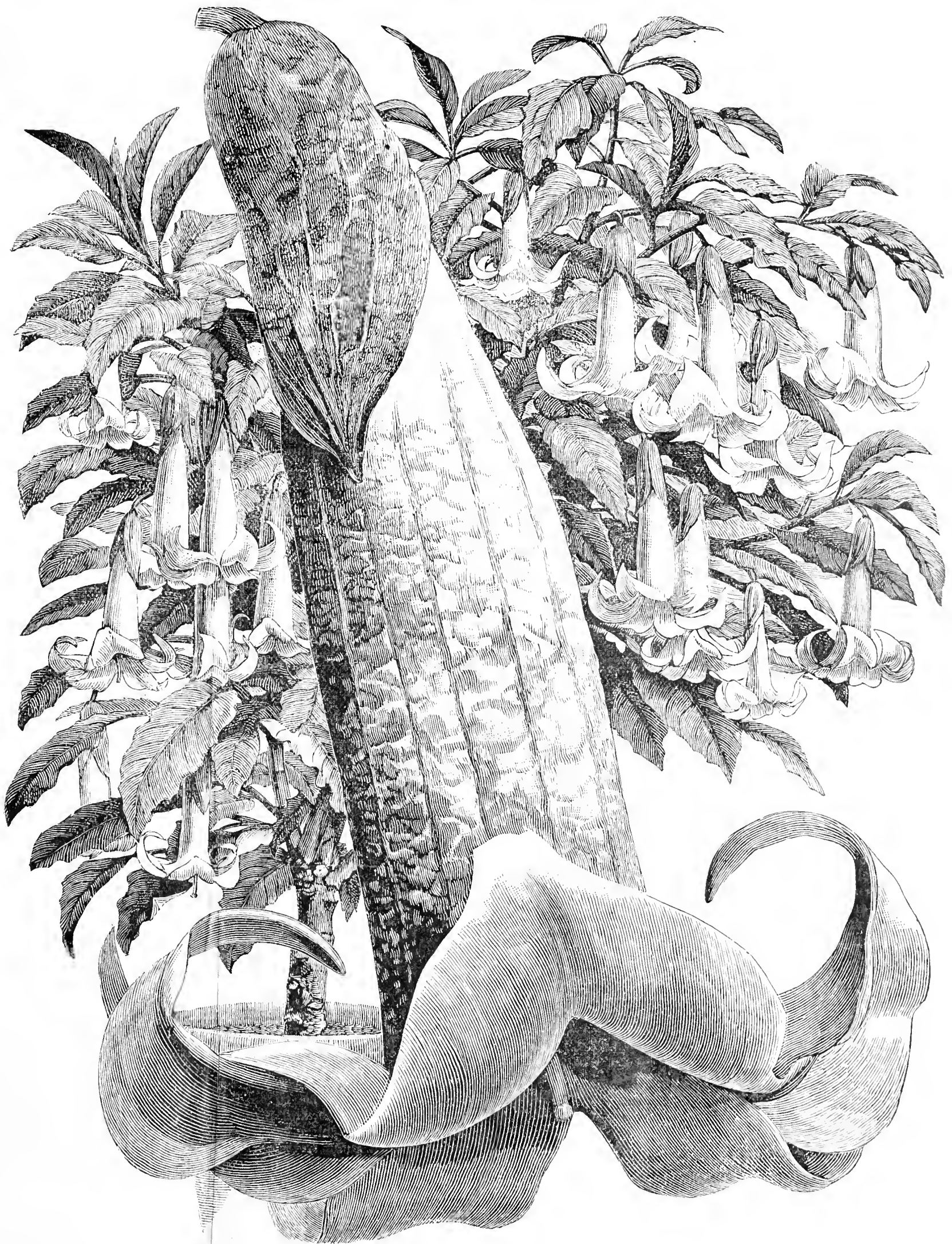


FIG. 52.—BRUGMANSIA (DATURA) ARBOREA (?).

stage or an improvised wooden bench not far from the glass and over some hot-water pipes. Not much depth of soil is required for giving the plants a start; just sufficient to cover and surround the ball of roots is ample, but it must be made firm. In a light, sunny house

training to a single stem. On the floor of the house give them more room. A space of 20 inches will be best, but regard must be had to having sufficient space for cultural operations, and when a large area is covered leave out a row between each three or four to admit of

passing among them for this purpose. The single stem method of training is the simplest and easiest, and produces good crops.

Where planting out is not practicable pot culture must be adopted, good results following this method; 11 or 12-inch pots provide the necessary root room, giving efficient drainage. The compost ought to be substantial and good, but not over-rich. Three parts of turfy loam to one of decayed manure, with wood ashes and sand, will form a suitable mixture. Previous to potting or planting out finally see that the soil in the pots is thoroughly moist, not wet. Turn out the plants, remove the crocks at the base, then fix the plants on a layer of soil about an inch thick. Surround the ball with more soil, making the whole firm, but add no more than will cover the whole. This will be sufficient until the first fruit has set and active roots begin to work through; then add some more, the fresh character of which will encourage the production of new fibres.

After fruit has set freely these frequent top-dressings will be of great assistance in supporting the crop. Further feeding should be carried out by the aid of liquid manure made from horse, cow and sheep manure, using a peck of manure to 25 gallons of water. Tie the manure in a bag, sinking it in the water in a tub. Give an application once or twice a week. Soot is an excellent fertiliser for Tomatoes. Tie a peck of fresh soot in a bag, which place in water in a tub holding 25 gallons. In a few days clarify the mixture by adding a spadeful of lime. This makes the liquid as clear as wine. Occasionally give Peruvian guano 1 oz. to a gallon of water, or nitrate of soda $\frac{1}{4}$ oz. to a gallon of water. The nitrate must only be used when a heavy crop is being carried by the plants, otherwise its effect would be injurious.

One important detail in the culture of Tomatoes ought not to be overlooked, and that is the rubbing out of side shoots from the axils of the leaves on the main stems. Also afford constant ventilation, and in dull weather use gentle fire heat. In sunny weather with a little breeze the flowers will disperse their own pollen, but it is usually advantageous to shake the trellis at midday so as to scatter it and insure some grains falling on the stigmas.

Blackwood Park Prolific, Duke of York, Perfection, Chemin Rouge, Frogmore Selected, Blenheim Orange, Golden Perfection and Golden Nugget are among the best varieties of Tomatoes. Sutton's Maincrop is good for the open air.—E. D. S.

HARDY BORDER FLOWERS.

ARABISES.

THE most useful of the Arabises for border cultivation are *A. albida*, *A. alpina*, and the variegated variety of *A. lucida*. Of these the best for floral effect is either *A. albida* or *A. alpina*. There is little to choose between the two, but the former has the larger flowers. Both are pure white, and in masses give a fine effect in spring, when their sheets of snowy flowers are at their best. They delight in light soil, and in such bloom more freely and the plants reach a larger size. The new double variety of *A. alpina* I have not yet flowered, but it is highly spoken of by some. It ought to last longer in flower than the single forms. *Arabis lucida* is often used for edgings or lines. Its variegation is effective, and at some seasons is much admired. The flowers themselves are not equal to those of *A. albida*. It may be mentioned that there is also a variegated form of *A. albida*. *Arabis lucida* likes a rather heavy soil and a cool climate. Several other Arabises are more suitable for the rock garden, and are thus omitted.

ARENARIAS.

There are not many of the Sand Cresses which are of much value for the border, their uses being more apparent in the alpine garden. *Arenaria graminifolia* is occasionally used, but it is not very effective in the border. It has white flowers on simple erect stems, and grows from 6 to 9 inches high. The best of the genus for our purpose is *A. grandiflora*, a really beautiful plant for the front of the border. It is dwarf and compact, only growing about 6 inches high, and has pretty white flowers which are large for the size of the plant. It will grow in almost any soil, and is increased by seeds or division.

ARISEMAS.

These Aroids are only to be recommended to those who can appreciate plants of uncommon appearance, that are more valued for their singularity than for bright colouring. They are thus not to be suggested as flowers for what is fitly called the "dressed border," as their charms consist in other qualities than those which appeal to the gardener of ordinary tastes. One of the best of the hardy species is *A. triphylla*, which grows about a foot high, and has green and purple brown spathes and brown spotted spadices. The leaves are trifoliate. Another hardy species is *A. ringens*, whose spathes are green, white, and purple, and whose spadix is of a yellowish green. This species is a native of Japan, the former one coming from North America. The *Arisemas* like a good soil, and are increased by division.

ARMERIAS.

The *Armerias*, or Thrifts, form a pretty group of plants, some being of considerable beauty. The dwarf species are sometimes used for edgings, but may also be grown in clumps further back. The taller species are pleasing when in bloom and a few are useful for cutting. One of the most pleasing is the tall *A. cephalotes*, the Round-headed Thrift or Sea Pink. It grows from about 12 to 20 inches high, and is a handsome and desirable plant. Unfortunately it is not a long-liver, and ought to be raised from seed every year to avoid the risk of losing it. It has several synonyms, but is generally known by the name here used. The next in value, so far as regards beauty, though it is superior as regards its perennial habit, is *A. plantaginea*. The flowers of *A. cephalotes* vary from white to bright rose and almost crimson, but those of *A. plantaginea* have neither the white nor the crimson shades. The common Sea Pink of our coasts is occasionally grown, together with its white variety. *Armeria maritima* is hardly bright enough for many purposes, and those who want a Thrift of the same size but deeper colour should procure the variety named *A. m. Lanchana*, with deep pink flowers. The Thrifts are not difficult to grow in ordinary soil, and may best be increased by seeds or division. Cuttings may be rooted in a frame or under a hand-light.—S. A.

GROWING GLOXINIAS.

WE admire some plants for their handsome foliage, others for the beauty and size of their flowers, and some for their graceful habit of growth; but when we find these three good properties combined in a great measure in the *Gloxinia*, we are not surprised that it is generally appreciated and cultivated. Its fine, rich, trumpet-like flowers, either of distinct colours, white, crimson, blue, purple, or pink, striped, mottled, edged, or blotched with carmine, blue, bright rose, and blush—either rising boldly above or resting on its fine, rich, velvety, large, and beautifully-veined foliage—give to the whole plant when properly managed a fine, massive, and graceful appearance, like a bouquet handsomely and artistically arranged.

Although *Gloxinias* generally receive the same treatment as other tropical plants, nevertheless, amateurs and others who have a warm greenhouse and a frame heated by manure can grow them to as great perfection as where they are allowed a higher temperature. Sow the seeds in pots of light sandy peat at once; fill the pots half full of crocks, over which place a layer of moss and peat, after which sift a little peat and sand very fine, distributing the seed evenly thereon. It requires no covering with soil. Water with a very fine rose, cover with a bell-glass, and plunge the pots in bottom heat. In ten days or a fortnight the plants will appear. Give air by degrees. When they have formed three or four leaves transplant them into 3-inch pots, and if properly supplied with heat and moisture the plants will bloom in the autumn of the same year. They should not be dried-off until the second year, as the small fibres are not sufficiently strong to cause them to start vigorously in spring. This remark is also applicable to young plants raised from cuttings.

The stock can be readily increased, as almost every part of the leaves will form plants if a portion of the midrib be retained in each cutting. Divide the leaves transversely, place them in pots of fine sand, cover with a bell-glass, and plunge in a strong heat; in a short time callosities will form at the base of the cuttings. Repot in good sandy peat, replunging and covering with a hand-glass, giving air occasionally. If the plants to be propagated are very choice, remove them into a large pot, making incisions on the midrib of the lower leaves, placing a few pebbles on the leaves to keep them to the soil; this is the safest method. They will soon root if a good heat is maintained, and may be repotted immediately.

February or the beginning of March is the best time for starting the old plants after their winter rest. In potting, the old soil should be carefully removed from the roots. In planting, press the roots gently on the surface of the soil, and give them no water for some time. The soil should consist of half peat, one-fourth loam, and one-fourth leaf mould mixed well together, and used in a moderately rough state. A thorough drainage of crocks is indispensably necessary. As they progress in growth and fill their pots with roots they are to be liberally shifted, not exactly on the one-shift system, but approximating to it—that is, from a 5-inch to an 8-inch, where they will attain a size, luxuriance of growth, and profusion of flowers suitable for exhibition or for adorning the conservatory. The soil should be gradually enriched with some well-decayed manure until they receive their last shift, when more loam with less peat and a liberal addition of decayed manure may be given, the soil being used in a rough state.

After they are all potted remove them to a frame where the temperature is about 60°, and when they have commenced growing give them a little water, increasing the quantity as they advance in growth. A little air must be given in fine weather. During their season of blooming a watering with weak liquid manure (sheep's, pigeons', fowls' manure or guano) may be given occasionally, which will increase the luxuriance of the foliage and the brilliancy of the flowers. When flowering is finished water must be gradually discontinued, and at last entirely dispensed with, when they should be removed to any out-of-the-way shelf in a warm greenhouse for two or three months until February, when the season for fresh growth again arrives.—J. H.

GEUM COCCINEUM FL.-PL.

THIS is one of the earliest, brightest, and finest of hardy border plants; it is late as well as early, for it flowers with me from early spring to late summer. I use immense numbers for decorative purposes, for which they are particularly valuable. Of course it is well known that the flowers (fig. 53) are of a brilliant scarlet colour. The plants are raised from seeds sown and treated precisely similar to Sweet Williams. A bed of this fine old semi-double Geum should be in every garden where a supply of scarlet flowers is required for vase decoration. Young plants have finer flowers and produce them more continuously than old stock, and hence it is advisable to sow a few seeds annually so as to insure a number of vigorous plants. Plants raised from seeds sown now would in all probability yield some flowers next year, and would certainly produce an abundant supply the year following. It is a border flower of the first order of merit, but to see it to the best advantage it should be grown in large masses.—F.

GLADIOLUS CULTURE.

THE Gladiolus has become a favourite flower, and many of its varieties are so reduced in price that it is now within the reach of all. It has many good properties, one of its greatest is its suitability for decorative purposes. When cut and intermixed with other flowers for the drawing-room it will not wither in two or three days, as an ordinary flower does; but with care and attention in taking off a little of the lower part of the stem, supplying fresh water, removing the decayed blooms, a succession of expanding buds enables it to retain its place for a fortnight at least.

It can be advantageously appropriated to window decoration, interspersed with other plants to form a contrast. Take a bottle, of which the neck must be sufficiently wide to admit the stem of a Gladiolus, and plunge it into soil in a flower pot—a deep narrow one is the most suitable for this purpose; fill the bottle nearly full of water, and cut the spike the height that may be required, introducing a few blades of its foliage to give it the appearance of a growing plant. By attention as above, of course preventing the rays of the hot sun from falling directly upon the spike, I think that all who try this method will feel themselves compensated for the slight trouble they have taken. Those who grow the bulbs in beds or groups can always take a few spikes for this purpose without materially injuring the appearance of the garden, hence one of the advantages of grouping.

A succession of bloom may be kept up by amateurs for from four to five months. There are two ways of accomplishing this. 1st, by planting at different times; 2nd, by a careful selection of large and small corms.

Perhaps I may here be permitted to say that I have been an ardent amateur for very many years, and have cultivated bulbous-rooted plants to a considerable extent. I commenced the culture of Gladioli as soon as they came into repute, and have paid special attention to them. They are hardier than the generality of people are disposed to think; however, I paid a penalty in testing their hardiness by losing upwards of 200 bulbs; but under ordinary circumstances and in a favourable situation they may with safety be planted, weather permitting, in the latter part of February or the early part of March. When they are about to break through the surface a little protection is necessary, such as straw, dry litter, or cocoa-nut fibre refuse.

CULTURE IN POTS.

Some persons recommend artificial heat, which I strongly object to for corms that are intended for the open ground; but if early blooming is required, I rather prefer to plant in pots and plunge in a cold frame, choosing my largest corms and the early varieties for this purpose; in fact, I consider it a good plan to plunge in this way at different periods, to obtain a succession of bloom when there is convenience at hand to do so.

In potting for the cold frame first insert crocks, then a little sound turf mixed with sand and leaf mould; next put in the corm, and cover it with sand and crushed charcoal, filling up with the previous compost. Be cautious not to give too much water. When planting out, remove the top soil, or rather turn it back, and add a little more sand and charcoal.

I would impress upon all cultivators of the Gladiolus the absolute necessity of a dry bottom or good drainage. I have been rather amused at the detailed account given me by a friend's mode of growing. He digs out his bed to a depth of 3 feet. The first layer consists of 4 inches of turf; then I calculate that there will be 9 or 10 inches of decayed cow manure (it is a pity to waste such good stuff, it often cannot be obtained), and 18 inches of turf and loam; then come the corms in cocoa-nut fibre, and 4 or 5 inches of turf and loam upon this, making the 36 inches. Had I to make up his bed, and 3 feet deep, my experience would lead me to proceed as follows: 6 inches of brick rubbish, then turn back upon this 8 inches of the top soil taken out,

with a little sand added, as it is strong; upon this 5 inches of the decayed cow manure, and 13 inches of the turf and sandy loam; then my corms smothered in a little clean river sand, mixed with bruised charcoal, completing with 4 inches more of the turf and sandy loam, of course thoroughly incorporated.

The following, which is my own mode of culture, I have invariably found successful:—Bed 30 inches in depth; bottom dry, of course. Turn back 10 inches of the top soil taken out, put in 4 inches of old cow manure, then well-mixed turf, sand, and loam, with the addition of a little old leaf mould, if certain of its containing neither fungus nor anything to create it, to the depth of 12 inches. I then plant my corms covered by a little clean river sand, mixed with crushed charcoal, and a covering of 4 inches of turf and loam. Protect as above. I do not object to silver sand, but it is in some cases more expensive, and I consider the other quite as advantageous.

GROWING IN BEDS.

I am not an advocate for growing Gladioli in beds unless the blooms are required for exhibition; when this is the case the corms should be planted 8 or 9 inches apart each way, leaving a groove between the



FIG. 53.—GEUM COCCINEUM FL. PL.

rows for the purpose of applying liquid manure if necessary, as I strongly object to any kind of manure coming in close contact with the corms. It is better, as a safeguard, to water the bed slightly before applying the liquid manure, and also again after doing so.

If not wanted for exhibition, I prefer grouping five or six corms together, or as number and convenience suggest, the soil being prepared in the same manner. In the autumn, when I take up my corms, I treat them in the same way as I usually do Tulips—simply drying, and protecting from frost during their time of rest. I throw out the soil upon a space prepared for it to the depth of the cow manure. I then have the latter forked up with a portion of the soil below it, turning this over frequently to temper it thoroughly, at the same time turning over what had been previously laid out. When planting time draws near I add a little more decayed cow manure, and then fill in the soil that has been thrown out. This I have done for some years and have never been disappointed with the result.

When leaf mould is introduced, let it be leaf mould, not decomposing leaves. Nothing to my mind is more injurious than decaying sticks or timber. Pieces of the former are invariably mingled with decaying leaves, and as invariably fungus is produced. Of all edgings for beds, avoid wooden ones; the boards and stays employed are almost certain, sooner or later, to produce fungus, a consequence of all others to be feared. I do not know of anything else which has such an injurious effect upon corms.—FLORA.

THE MAGIC OF SUNSHINE.

THE mists and fogs which rise from our watery surroundings have too long hung like a pall over the British Isles. Day by day, almost week by week, the gloom of a sunless sky has been relieved only by an occasional downpour of rain or a blinding snowstorm. If it be true that the restless energy and dogged determination of the Briton are caused by the climatic variation under which we are reared, surely in the future we ought to be more determined than ever, for a nation who can press steadily, hopefully, onward in spite of depressing news received during dismal weather, must assuredly possess the grit which makes for greatness. Such are the trying times of our lives, but fortunately the silver lining often follows the dark cloud, while this in turn gives place to the inspiring sunshine which sets the whole universe in motion.

The sunshine of spring is anxiously longed for by all classes of the community, but gardeners have special reasons for doing so, because through its influence the plants and crops under their care flourish with a vigour which makes the heart glad. Early forced fruit and vegetables which recently have been almost at a standstill, now show considerable progress as each day ends, and the leaves begin to lose the pale coloured growth of winter, and assume a rich green tint. With so many illustrative facts before us concerning the power of sunshine and lengthening days upon vegetation, the question naturally arises, How comes it that sunshine produces such wonderful results?

Not only gardeners, but almost any adult, knows instinctively that heat and sunlight are potent forces in making the earth "smile with plenty" when moisture is also present, but few could definitely explain why such is the case. Although plant physiologists have not yet drawn from Nature the whole of her secrets in regard to the matter, they are able to afford us some enlightenment. They tell us that as the temperature is raised by the sun's rays, the sap of trees and plants, which thickens under the influence of cold, changes to a thinner liquid that has a more rapid circulation. This, however, is only one part—the smallest part—of the various forces which "King Sol" sets in motion. Vegetation derives a vast amount of food from the atmosphere, and, under the influence of sunlight the progress of absorption, decomposition, and exhalation is greatly accelerated. The carbonic acid gas, which is absorbed from the atmosphere through the pores of the leaves, is then quickly decomposed, the charcoal retained by the plants, and the oxygen returned to the air. Thus the atmosphere which surrounds us is being continually vitiated by animal life and purified by rapid growing vegetation.

There is also another phase in connection with the matter which should be touched upon—viz., the influence sunlight exerts upon the soil. The warm air being pressed into the soil causes roots to extend with great rapidity, and each tiny root-hair within reach of the atmosphere draws some good from it—good in the form of gases which unite with the acids in the soil.

The above facts, I think, should show us in some degree the subtle laws by which Nature sets her forces in motion by the aid of sunshine, with such wonderful results. They show us also that the time-honoured practice of frequently stirring soil during the warm days of spring is founded on a scientific principle, though probably in the majority of cases only practised because observation showed the good results which followed. The loosened surface lets in the warm air more freely than that which is left undisturbed; and, as it also prevents the moisture beneath from evaporating, the three great essentials—warmth, air, and moisture—are found in combination, and under such circumstances rapid growth will ever be made provided the soil is fairly rich.

Work in the open air has recently been almost at a standstill, but a "turning movement" should soon bring the soil into that desirable condition in which it may be worked with advantage; then each moment of daylight will be precious indeed for all real gardeners who strain every nerve to make good past delays. All experienced men, however, know well how fatal it is to let over-anxiety force their hands to disturb the soil while it is wet and clammy; the work cannot then be either well or quickly performed, and the soil, instead of crumbling under the influence of wind and sunshine, will be converted into hard lumps, which will take a whole season to get right again. Compare the results obtained from seeds sown under various conditions. The man who makes a point of sowing his Onion or Carrot seed on a certain week, when that time arrives anxiously looks out for a break in the weather, and during the first fine day makes a great effort to get the work done, although the soil may not by any means be in an ideal condition for working. By dint of misapplied perseverance the task is accomplished, but the wetness of the soil to a great extent seals it from the action of air and sunshine, and when fine weather does come the seeds sprout slowly, and the young plants are pale in the leaf, all because warmth and air have not freely entered the soil.

The more level-headed gardener waits till a settled sunny day arrives, when the soil is dry upon the surface; willing hands then

quickly loosen it with hoe or rake, it is left for an hour or two to dry still further, when the drills are drawn and allowed to bask in the magic sunshine for a time before the seeds are sown. When all is completed the surface is loose and crumbly, the air and sunshine enter freely, and when the seedlings push through the soil they are sturdy and strong, and grow with far greater rapidity than those sown a week or two earlier under less favourable conditions, and at the time of harvest give infinitely better results.

Such examples might be multiplied indefinitely, but for the present I think enough has been advanced to show, in the glorious sunshine—when we get it—the gardener has a willing servant, and those who have the happy "knack" of turning that service to the best account will ever press onward in the "gentle art, the art which gladdens the eye with beauty, and fills our stores with plenty."—ONWARD.

ROBINIA HISPIDA.

A SHORT time ago a writer of some interesting notes on flowering trees mentioned the Rose Acacia (fig. 54) and others of the Acacia family being broken down by the weight of the flowers. I can speak with feeling, especially in regard to this one. I have this season had fine plants of it blown out at the point where the shoots leave the main stem, but this is not so much due to any inherent weakness of the species as to the ridiculous method of grafting—and badly grafting—it on half-dead stems of the Thorn Acacia. Worked low down the plant would make a strong, though perhaps not exactly a straight stem; but trees I purchased a year or two back were so badly worked that they had the crevices stopped up with grafting wax before they came into my hands.

What wonder if such trees blow out; yet they come from what is considered a first-rate nursery. The same correspondent called attention, too, and rightly, to the fact that André's Genista will not thrive on some soils. Here I have a great difficulty in getting it to move, but I should like to recommend the Spanish Broom, *Spartium junceum*, to anyone who fails with the former. It is a beautiful plant, and very free growing, but hares and rabbits give it no quarter if they can reach it.—H. R. RICHARDS, *Coldham*.

POLYGONUM BALDSCHUANICUM.

A VERY interesting article in a recent number of the "Revue Horticole," by M. Dauthenay, upon this Polygonum leads one to think that it may advantageously be again brought before readers who admire climbing plants. There is certainly no scarcity of these indispensable aids to the beauty of the garden, but we have few, if any, at all like *Polygonum Baldschuanicum* in general appearance. I do not like to say that I care for the tone of colour of its foliage, although I admit that many persons do, but its flowers are so attractive, and its general effect so good, that one is disposed to overlook any faults it may have. Until recently it has been too high in price to induce many to grow it, but now that growers have apparently mastered its propagation plants have become much cheaper. Last autumn I obtained a good plant from the continent at a moderate price.

I was glad to possess the details about its introduction. The article does not say, however, when it found its way into the Royal Gardens at Kew, where I saw it last year. It was, it appears, found by M. Regel in Turkestan in 1882, and was described and figured in the "Transactions of the St. Petersburg Botanic Garden," vol. vii. It appears that it had been named *Atraphaxis nov. sp.*, but that M. Regel had convinced himself that it was a *Polygonum*. It reached the Museum of Paris in 1892. There, as at Kew, it is perfectly hardy. It grows to a height of 12 or 15 feet, and when grown up a pole makes a pretty pyramid of cordate foliage freely covered with bunches of white flowers prettily tinged with rose.

While this method of growing *Polygonum Baldschuanicum* may be convenient for a botanic garden, it is too formal for most private gardens, and I think it could be grown with better effect up a tree or against a trellis or wall; not, of course, in a formal way. It does not appear to be fastidious as to soil, but in order to make it grow freely—an almost needful thing if we want to enjoy the full beauty of climbing plants—it ought to have a station well prepared for it by deep digging and free manuring. It has the reputation of being a difficult plant to propagate, and many have failed with it. It is however, said to be easily increased by taking shoots of the past year and after cutting them into lengths, laying them in pots or pans with a thin layer of silver sand above. These pots or pans are placed in a moderate heat. While I am not prepared to place it in the highest rank of our climbing ornamental plants, it is superior to many that are grown at present.—S. ARNOTT.

RETINOSPORA ERICOIDES.

RETINOSPORA is a generic title which has been given to a class of Conifers that have little in common with each other except superficial appearances. Under the name of *R. ericoides* three plants are, or have been, commonly known, one of which is a North American species of *Cupressus*, and the other two varieties of two species of *Thuia*, one of which is a native of North-Eastern America, and the other of China and Japan. The first of these is *Cupressus thyoides*, which was formerly known as *R. ericoides*, but of late years this has been dropped in favour of *Chamaecyparis sphæroidea*. It is a native of N. America, and is commonly known there as the White Cedar, though this, like most other common names, is entirely misleading. It forms a tree of

less flattened, and the leaves more pointed and less appressed to the stems. But in many plants of this variety, more especially those of some age, a second kind of growth can be found lower on the branches and near the main stem; this growth differs little, if any, from that of the var. *ericoides*.

The third is *T. orientalis* var. *ericoides*, which is very much like the preceding both in point of size and general appearance, but the winter tint is much more vivid, and the plant has rather more of a spreading habit. The leaves also are set at nearly right angles to the stem instead of pointing forward, and are distinctly glaucous on the back, and have also a faint glaucous tint on the upper surface. The connecting link between this and the type is not very clearly shown, though traces of it can be seen in the vars. *intermedia* and *pendula*.



FIG. 54.—ROBINIA HISPIDA.

columnar outline, which in this country has attained a height of about 40 feet so far, but with time will probably reach 60 or 80 feet. Its branches are short and much divided, especially at the extremities, and the leaves are small and closely adherent to the stem. It can be easily raised from seed, which is freely produced in this country.

The second is *Thuia occidentalis* var. *ericoides*, which is a very different looking plant to its parent species, the well known American *Arbor Vitæ*, as it only grows about 7 or 8 feet high, but is seen at its best as a young plant of about 2 or 3 feet, when it forms a feathery-looking specimen, which in winter assumes a pleasing bronzy tint. In summer it shows little of this colouring, being nearly or entirely green, but changes on the approach of winter. The leaves are small and point towards the ends of the branches, and are green, or slightly glaucous, on the back. Though this plant differs so much from *T. occidentalis* in general appearance and habit, yet the connection between the two can be clearly seen in *T. occ.* var. *Ellwangeriana*, in which the ordinary growth is smaller than in the type, the secondary branches

These two latter plants, known as *R. ericoides*, are perhaps the most useful of the smaller-growing Conifers, as they are easily propagated by cuttings, are perfectly hardy, and can be used for so many different purposes of decoration. For window boxes, the filling of bords for the winter, or for the conservatory they are invaluable, as they have a distinctive beauty of their own that is very effective, and which is seen at its best during the winter months.—C.

PLANT DOCTORS.—A writer in a contemporary urges the need of a new class of educated physicians, whose business shall be the care and cure of disease-threatened and disease-stricken plants. "The time will come," he says, "when every agricultural district will have its plant doctor." He even foresees the development of specialties by plant doctors just as by other physicians, so that in many difficult and obscure cases of disease affecting valuable plants the services of such specialists will be employed.

THE YOUNG GARDENERS' DOMAIN.

BITS FOR THE BOTHY.

ON THE MARCH. (Continued from page 166.)

En route for the promised land of a young gardener's hopes and aspirations, every stage gives deeper and wider views. 'Tis as if the morning of life in breaking through a haze pregnant with possibilities advances with a continually lifting horizon. On that horizon lays the goal of ambition, ever tempting a man onwards and upwards.

"It fleets on the vision, deluding the view;
Its banks still retire as the hunters pursue."

"This is a queer kind of logic," some may think. It is a natural thought. One particular point, however, has to be impressed, even to the risk of wounding a young soldier's *amour propre*, that is never to feel quite satisfied with your efforts—with yourself. No great man or good man ever did. There is a something in the human breast, and it has been there since man was placed on earth, prompting him to use the highest step he ever reached for the purpose of stopping higher still.

Self-satisfaction is as contemptible a thing as self-pity, and where a growth of either crops up it may be rightly concluded that something has gone wrong; too often the fault of the trainer it is feared, for "as the twig is bent the tree's inclined." You do not, perhaps, quite understand this yet. That is natural, too. Would that time, and space, and power permitted such things to be placed in a clearer light before you to prevent any young recruit who is now manfully stepping out from perverting the incentive, which it is, into a stumblingblock, that it may appear. The most one dares to hope is that it may be the germ implanted in the fresh medium of a young heart to grow into the highest and noblest of thoughts and actions; then—"what then?" you will ask, after showing that the ideal still lays a little beyond—the great beyond. Then, "In the temper of the invisible mind, the godlike and undying intellect. There are distinctions that will live in heaven."

There are, there should be, quiet moments in the bothy when the day's work is done, when you have not only been true to your master, but true to yourself in the self-imposed task, when it is good to elevate the mind above the comparative smallness of its surroundings, and enjoy in the very fetters of your flesh, as Epictetus did, the highest and noblest of freeborn thought. Do so. It shall one day place you high in the ranks of gardeners, and higher still in the ranks of men. March on, then, my young recruits!

As physical drill brings every muscle into play, so mental exercise develops the faculties to a degree of which few recruits are aware. Do not grumble because you are deprived of the more showy advantages that many youths possess, and in order to be saved from mediocrity you are compelled to work out your own salvation. Self-education is the finest form of education extant, although it is the fault of a few and the misfortune of many that they will not or cannot see it. That the method is not an easy one is admitted, but the harder the nut the sweeter the kernel, when you have cracked it yourself. Crammering is a mechanical process, and although the recipient may shine on an examination paper, one is sometimes surprised in a little conversational rubbing of the highly polished article to find it is only veneer after all.

Halt! This is necessary in order to mark time. To follow any course without a method is to court a muddle, and it is of the highest importance that censorship of some sort should regulate a recruit's efforts, more especially in considering that he is a freelance in bothydom. Necessary? Nay, it is insisted, that each recruit laiks periodically for inspection. How is it to be done? Will he trot himself out for a comrade's criticism? No; that won't do. Or for his officer's inspection? That might do, but may not be expedient; and, after all, there are motives of delicacy, perhaps, forbidding even those who are nearer and dearer from coming between a boy and his conscience. We will say, for example, that Tom Jones is being reviewed, but, as a matter of fact, the best part and the worst part (matters must not be minced) of Tom Jones is shut up inside, and this is the part we want to see. Each man, each boy, leads a dual life; the outer part is for the world, the other, the inner part, is not, in this sense, for the world; it is sacred. You, young reader, are for the moment Tom Jones; you take, as you ought to do, a keen interest in his welfare, and you are going to criticise his work. Please make these inspections weekly, monthly, quarterly, and yearly, to correspond with the periodical plans.

For the weekly inspection a few minutes will do, and this is how to do it. You, as Tom Jones the outer man, will put Tom Jones the inner man through his facings—call him to account for the week's work. Spare his feelings by privacy if you will, but otherwise be more inclined to rap his knuckles for any shortcomings than to pat him for just doing a plain duty. He has not, perhaps, carried out his weekly plan as he should have done. Why not? you will ask, sternly and uncompromisingly. "Oh! on such a night the boiler burst; all had to turn out." Right; that's a real excuse; let him off. Another night he was "in bad form; felt a bit shaky; couldn't settle down to study." Don't let him off, shake him up, and record all excuses, good and bad, in the diary. Long before the end of the year, before the grand review, T. J. has, perhaps, become very lax, and perhaps "dropped off" altogether. "Will turn over a new leaf at the new year." Don't believe him; you ought to know him better. Such cases are hard to cure; to prevent them is the earnest desire of—THE OLD BRIGADIER.

(To be continued.)

FREESIAS.

FREESIAS are amongst the most popular and useful plants we have for early spring flowering. The graceful flowers are most valuable for vases when cut with as long a stalk as possible, or the plants may be very effectively used for the conservatory, with small Ferns and Grasses dotted in between them. Freesias should be potted in 5-inch pots at the end of August to flower in January, putting six to eight bulbs in a pot. They succeed well in a compost of two parts of loam, one part of leaf mould, and one part of spent Mushroom bed refuse, with plenty of coarse sand. The pots should be clean, and have ample crocks placed in for drainage, with some moss on the top to prevent the particles of soil mixing with the drainage, which would soon become choked and the soil sour, and the roots perish.

After potting, the Freesias should be stood on coal ashes in a north frame, and covered with cocoa-nut fibre refuse until well rooted, when they must be moved to a frame, where they will get plenty of light and be near the glass. The plants must never be allowed to become dry at the roots, and the structure containing them should be well ventilated day and night. When the weather becomes cold they must be removed to a shelf in a cool greenhouse, where they will get abundance of light and fresh air. The plants should be neatly staked with small sticks or bamboos. I think it much better to give each bulb a stake than to tie them in a bundle, as one often sees them. When they begin to show flower spikes they should be fed about twice a week alternately with weak diluted cow manure and clear soot water.

After Freesias have done flowering, water must be gradually withheld and the bulbs dried off. The pots ought to be stood where they will be free from moisture, and with full exposure to the sun. This is very important, because if the bulbs are not well ripened by the sun success will not be fully attained the following season.—F. W. P.

DRAWING FOR YOUNG GARDENERS.

MANY bothytes and young gardeners are situated in localities far from towns, and, therefore, cannot attend lectures, evening classes, and things of that kind. Then some have not the energy or inclination for a course of hard study such as is entailed by entering for horticultural or other examinations. And who does not find ordinary reading tiring if continued without cessation through the long hours of a winter evening?

Yet young men, and especially young gardeners, are crammed full of onergy, and must be doing something. To such I would suggest that they take up drawing, an amusement, which, if persevered in, will prove profitable and instructive, and, moreover, one that will become fascinating, after the rudimentary stages are passed. I say that it is instructive, for it trains the eye and develops the faculty for observation. In my own case, for instance, I have noticed many little points about groups of trees and shrubs, masses of flowers, landscape scenes, and structures, that I should never have observed had I not taken up drawing as a study. And these apparently insignificant details might prove of the utmost importance in any laying-out or planting that I may be called upon to do in the future. Every gardener should be an artist, more or less, and, though true artists are born, not made, much may be learnt by steady application and observation.

Beginners naturally like to draw from printed copies, as it seems easier, and this is, I think, advisable, until some slight proficiency in the art is gained. But it should not be kept to too long. Very beautiful copies of flowers, fruit, and landscapes are to be found in some of Vere Foster's books (price 2d. each, procurable in any town or by post); there are also numbers of text books, ranging in price from 2s. upwards; any friendly schoolmaster would advise as to the purchase of these.

But the real delight comes when one dispenses with books, and can sit down and draw from nature. There are plenty of objects all around us—individual flowers, plants in bloom, trees in their summer and winter garb, and so on in endless variety. What more beautiful and yet comparatively easy subject could one choose than an Arum lily (*Richardia æthiopica*) in flower? Again, how interesting are the wonderful changes of light and shadow on a tree in full leaf. Have you ever noticed the changes in this way, wrought by the varying lights of a summer's day? You see a tree in the distance, and say that it is an Oak, an Elm, or Beech as the case may be. Have you ever stopped to think how you can determine this, not being sufficiently close to see the shape of the individual leaves? Could you explain that one tree differed from another in outline, or in the mode of growth or effect of light and shadow of its foliage? Drawing would teach you all such things as these.

Then there is another valuable kind of drawing, which needs the use of the rule, compass, and square. I refer to plan, scale, and perspective drawing. This, perhaps, is not quite so interesting, unless one has a turn for mathematics, but may prove extremely useful. Subjects for beginners can be found in houses, kitchen garden, and bothy which they occupy and work in. Ground plans and front and side elevations of these can be worked out, and thus a number of little structural details will be observed and mentally noted, which may prove of great use at some future time.

I may at some future date have more to say with regard to the tools required, and my own method of working. And who can tell? perhaps some of us young scribes may be so honoured as to, some day,

see our artistic efforts appear in the pages of the *Journal of Horticulture*, in pictorial explanation, may be, of some point we cannot make lucid in words. I am afraid what I have written is somewhat halting and imperfect for so great a subject, but if it arouses an interest for drawing in young gardeners my article will have done its work, and I am sure they (the young gardeners) will profit.—S. X.



FRUIT FORCING.

Cucumbers.—The night temperature in houses may be increased to 70°, but 5°, or even 10° lower on cold nights, is more favourable, watering more freely and increasing the atmospheric moisture. In the daytime 85° to 90° from sun heat should be allowed, running up to 95° or 100° when the weather is favourable after closing. Thin out the growths once a week, removing the old and superfluous, but not carrying this out excessively at one time. Stop, tie, and otherwise regulate the shoots as required, removing the tendrils and male blossoms. Supply lumpy loam previously warmed, and sprinkle over it a little soot.

Cucumbers in frames with the beds made up some time will need good linings, and when the heat is up see that there is no rank steam in the frame, preventing it by ventilation. A night covering will be necessary to maintain a night temperature of 65° to 70°. Admit a little air at 75°, and permit the temperature to increase to 85° or 90°, closing so as to maintain those degrees, or even advancing to 95°. Add a little more soil as the roots spread on the surface or protrude through the sides of the hillocks. Stop the leading shoots 1 foot from the sides of the frames, and the laterals at one or two joints beyond the show for fruit. Attend to training and pegging the shoots, being careful not to overcrowd them. In watering do not wet the foliage more than can be helped, taking care to have it at the same temperature as that of the beds. A sowing of seeds may be made to raise plants for growing in pits and frames that have been occupied with Radishes or early Potatoes. In four or five weeks the seedlings are ready for planting, and will come into bearing in or about a similar time, affording a supply of fruit during the summer.

Melons.—The earliest plants are now well advanced, and if stopped when they have extended about two-thirds across the trolis laterals follow, with fruit showing at the second or third joint. To insure a good and prompt setting of the fruit it is necessary to afford a bottom heat of 80° to 85°, and sufficient water only at the roots to prevent flagging. This will arrest growth, and in combination with a rather dry atmosphere, a circulation of warm air passing through the house will favour the production of pollen. When this is ripe, fertilise the pistillate blossoms as they expand every day, and stop the shoots at the same time one joint beyond them. If a succession of fruit be required in the same house, deprive some of the plants of the flowers that appear on the first laterals. Stopping these at the first or second joint will cause the sub-laterals to show fruit, which will be rather later and finer, owing to the increased vigour of the plants.

The plants in pits and frames will require attention in training and regulating the shoots, removing every alternate lateral, and applying water sufficiently to maintain a steady growth, always of the same temperature as that of the bed. As soon as successional seedlings are ready plant them out, and pot others as they become large enough. Seeds may be sown to provide plants for pits and frames as they become cleared of Radishes or early Potatoes, about five weeks being required to secure strong plants.

Vines.—*Eyes.*—Those inserted in February will now have rooted, and should be shifted into 6-inch pots as soon as the roots reach the sides of the smaller pots, placing them on slate shelves over the hot-water pipes. Water only to maintain a steady supply of moisture in the soil, erring, if at all, on the dry rather than the wet side. Syringe well amongst the Vines, but not too forcibly. Pinch the laterals to one leaf, also sub-laterals as made.

Cut-backs.—The canes cut back last month and placed in heat will now be fit for shaking out, repotting, or placing in the fruiting—12-inch pots. Keep them close and moderately moist until they are established. Train the canes near the glass so as to insure thoroughly solidified growth as it is made. Clean pots, and efficient drainage of clean crocks should always be provided. Turfy loam, rather rough and moderately moist only, with a pint of bonemeal, a quart of wood ashes, and a pint of soot to every bushel of loam, forms a suitable compost.

Early Forced Vines in Pots.—Canes started last November will now have the fruit stoned and taking the last swelling. The Vines, therefore, must not sustain any check through dryness at the roots or want of food. Surface-dress with rich material, and supply liquid manure until the Grapes are evenly coloured, then afford water only sufficient to preserve the foliage fresh and the fruit plump.

Early Houses.—Thinning the berries should be kept well in hand, commencing as soon as those likely to swell freely can be detected, and as a rule thin them well in the interior of the bunches, leaving the berries with room to attain their full size without wedging, and yet so full as not to fall out of shape when placed on a dish. Liquid manure applied to inside borders will materially assist the swelling of the Grapes after they have been thinned, but it is best to vary the diet, giving a top-dressing of some approved fertiliser about every three weeks. A liberal supply of atmospheric moisture is also necessary, and if moderately charged with ammonia it is beneficial to the Vines and inimical to red spider. It may be secured by occasionally sprinkling the border and paths with stable and cowhouse drainings duly diluted, or guano water, 1 oz. to a gallon of water, or better still supply a mulch of sweetened horse droppings, a little at a time over the whole border, but too much at once will prejudicially affect the foliage. Sharp winds require care in ventilating, air being judiciously admitted in such weather, so as to avoid sudden changes, and the consequent crippling of the foliage and rusting of the Grapes. A night temperature of 60° to 65°, 70° to 75° by day, and 80° to 85° from sun heat is suitable.

Succession Houses.—Disbud and tie down as the growths advance, stopping them two joints beyond the bunch where the space is limited, but where there is space allow a greater extension before stopping. Remove the laterals from the joints below the show for fruit except from the two basal leaves, which may be stopped at the first leaf, and one afterwards as produced. The laterals above the fruit may be allowed to make such growths as can have exposure to light without crowding, and then be stopped, keeping them closely pinched afterwards, as well as in the case of those not having room for extension. Remove all superfluous and ill-formed bunches of the free-setting varieties as soon as those most promising for the crop can be determined.

THE KITCHEN GARDEN.

Wet Weather and Seed Sowing.—Such a long spell of wet sunless weather following a heavy fall of snow has had the effect of saturating the soil, and garden work has been almost at a standstill for some time past. Especially bad is so much rain for the heavier clayey soils, and it will be most unwise to attempt working these till such time as they are considerably drier than at present.

Peas.—If seeds of early varieties were sown in the open ground prior to the fall of snow, and the plants are not yet showing through the soil, an examination should be made. If the seeds have germinated at intervals, only enough plants ought to be raised under glass to fill the gaps, while if the row promises to be so thin as to be not worth preserving, sufficient plants should be raised to form the requisite number of rows, or otherwise no very early dishes will be obtained. Sow the seeds moderately thickly in 3-inch to 5-inch pots; place in heat to germinate; harden the plants before they become leggy, and on the first favourable opportunity plant out, keeping the balls of soil intact. In this way early if not very heavy crops should be obtained. Sow more seed in the open directly the ground is fit to receive it.

Broad Beans.—Much that has been advanced concerning Peas also applies to these. As it happens Broad Beans are not so much appreciated as Peas, and only where they are wanted extra early need plants be raised under glass.

Broccoli.—Veitch's Autumn Protecting, and which is only a little inferior to Autumn Giant Cauliflower, forms an admirable succession to the latter, and pays well for raising and getting out early. Seeds sown in the open germinated in due course, but the seedlings quickly fell a prey to slugs which could not well be kept off in the wet weather prevailing. Enough plants for most gardens can easily be raised either in a frame or in boxes or pans of soil in gentle heat.

Brussels Sprouts.—Long rows and many beds of autumn raised plants have been decimated and in some cases cleared off by slugs, market growers complaining most of these losses. Seed sown early in February and protected by straw germinated surprisingly well, but the plants are disappearing fast, soot and lime washing off as fast as applied. A portion at least of the plants required ought to be raised quickly by sowing either on mild hotbeds in frames, protecting with either lights or mats, or, if only a comparatively few plants are required, as advised in the case of Broccoli.

Cauliflowers.—Plants under hand-lights and others that will be moved into sheltered borders or disposed at the foot of south walls will not grow well at first, and the probability is will, in many cases, "button," or form tiny hearts prematurely. Anyway it will be a good plan to quickly establish a number of small plants in 3-inch pots, keeping them on shelves in cool houses or in frames till strong enough to be hardened and planted out. The earlier varieties should be selected for this purpose. More plants of early main crop and autumn varieties ought also to be raised under glass.

Borecole.—There is no necessity to raise any plants of these under glass. A favourable opportunity should be selected for sowing seed of Borecole, successional (not late) Broccoli, Sprouting Broccoli and Savoy in the open some time in March.

Cabbages.—Autumn planted Cabbages are fairly promising, and at present there are few "bolting." It is an important crop, and if many failures are anticipated early raised plants may well be established in small pots under glass, duly hardened and planted out where the gaps

occur. If seed sown early in the open is not giving many plants more seed ought at once to be sown under glass, the plants properly treated heartening in early next summer.

Carrots.—Those who have sown seeds on mild hotbeds with or without the protection of glazed lights, will most probably have good reason to be satisfied with the results of their labour, as the earliest open air crops will be later than usual and thin. It is not yet too late to utilise a mild hotbed for an early crop of Horn Carrots.

Radishes.—Seeds sown in large beds and protected with straw, market growers' fashion, have germinated most satisfactorily. The plants should be dusted over as often as necessary with soot and lime to keep off slugs, and the covering of straw be hovered over them every evening, this protecting them from cold winds as well as frost. Sow more seed and treat similarly.

THE BEE-KEEPER.

THE LATE SPRING.

IN consequence of the severe weather experienced during the past month vegetation is very backward. It is, therefore, not surprising to find a great scarcity of early spring flowers throughout the Midlands. Usually at this date—the end of February—we have had them in abundance. Now the only flowers to be found in the open borders where no protection has been given are the Winter Aconites. Although the blooms were fully expanded before the heavy fall of snow and the severe frost came, they do not appear to have suffered in the least. In sheltered positions Snowdrops are just coming into bloom. These and a few Christmas Roses are the only hardy flowers at present.

Having in past years planted many thousands of bulbs and plants for the adornment of the garden, which are bright in their season and beneficial to the bees, we are enabled to form a fairly correct opinion as to their early flowering or otherwise. Last year at this date there were large masses of Crocuses in bloom; also *Arabis alpina*, *Myosotis dissitiflora*, Primroses, Violets, and the earlier sown Wallflowers were showing their first flowers.

After the excessive rainfall experienced during the past month the land will be in a wet and cold condition for some time to come; and owing to the scarcity of flowers the garden will doubtless have a somewhat gloomy appearance. The plants, however, will bloom with greater freedom, and as the days lengthen the sun will be more powerful. This will be an advantage to bee-keepers, as should the weather be favourable bees will make great headway, as there will be an abundance of pollen. Much of this is wasted early in the season when the flowers are early and the bees have not commenced breeding.

POLLEN-PRODUCING TREES.

The early spring is a suitable season for planting either hardy trees, shrubs, and plants, which will not only beautify the garden or woodland, but will benefit the bees. Planting should not be attempted until the land is in fit condition. Amongst early pollen-producing trees we would mention the common Palm Willow. It is one of the earliest and best with which we are acquainted, lasting a long time in good condition. It may be planted in any out of the way damp position, and will thrive where only the *Salix* will succeed. The common Barberry may be planted in the shrubbery or woodland, and being a dwarf growing shrub it will not take up much room. It produces an abundance of pollen at a season when it is most useful to the bees, and is usually in flower before the Palm Willow is quite over.

The above are succeeded by the Box tree. Although this is not usually classed as a pollen producer, it is really one of the best for late spring. We have numerous bushes near our apiary; some of them are of a great age, and during the time they are in flower they are much visited by the bees. Unfortunately, they do not bloom in a young state. The same fault may be found with the Lime tree, one of the best late honey-producing trees in this country. We would recommend the Lime tree to be planted extensively, not only for the above good quality, but also for its handsome appearance, either as a single specimen or as an avenue tree.

The Almond should not be omitted, as when planted singly in prominent positions they have a very showy appearance whilst in bloom, and the bees work freely on the blossoms. Apples, Pears, Apricots, and Plums, as well as the various small fruits, are much frequented by the bees, and need no description here. Of late years we have planted the Siberian Crab and its varieties as single specimens. These have a handsome appearance whilst in bloom, and when they are laden with fruit, as well as being beneficial to the bees.—AN ENGLISH BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

R. H. Bath, Ltd., Wisbech.—*Plants and Seeds.*
E. P. Dixon & Sons, Hull.—*Farm Seeds.*
Kent & Brydon, Darlington.—*Farm Seeds.*
E. H. Krelage & Son, Haarlem.—*Novelties.*



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Tulips not Opening Satisfactorily (*Temperance*).—The plants are in good condition at the roots, the bulbs quite sound, the stems and foliage healthy, and there does not appear any defect of condition calculated from a cultural point of view to account for the flowers not expanding properly. One of the blooms had very thin and even shrivelled petals, but beyond that no trace of disease was discovered. The other flower was more or less decayed, and on parts there was a mould, named by fungologists *Botrytis candida*. Whether the cause or the consequence of the condition of affairs, it is injurious to blossoms and even fruits of Strawberries and many other flowers in a damp atmosphere. The only preventive, for there is no remedy, is to avoid a close stagnant atmosphere by judicious ventilation. The weather lately has been such as not to admit of much ventilation, hence the damp and favouring conditions for the development of the fungus.

Cucumber Plant Unsatisfactory (*Cross*).—The specimen has been carefully examined, but no trace of animal or vegetable parasite discovered in the plant or on the roots. The young rootlets, however, are more or less brown and dead, but whether caused by deleterious bodies in the soil, over-watering, or something organic we are unable to determine at the present stage. The fibrelets are rusted and the plant suffers in growth through loss of imbibing power. The rust may have been caused by water containing an excess of iron, or the water may have been too cold and given a chill. A sprinkling of air-slaked chalk lime and soot in equal parts by measure, mixed, would, we think, improve the soil, using 4 ozs. per square yard on planted-out stock, or half a pound may be mixed with a cubic foot of soil before planting, or sprinkle occasionally on the surface after planting, the watering sufficing to wash it in. A good handful of the mixture per square yard is sufficient at a time, and about every three weeks often enough.

Pæonies from Seeds (*C. B. T.*).—The seeds you bought were probably good. The proper time to sow seeds of Pæonies is in September, in pans containing good loamy soil, covering the seeds with fine soil a little deeper than the diameter of the seeds, placing in a cold frame or pit, and keeping moist. Some of the plants will appear the first and others the second spring after sowing; therefore, the seed pans should be kept until the autumn of the second year, when you will have all the plants that will appear, and they may then be pricked out in good rich soil in a somewhat sheltered situation outdoors, planting them in rows a foot apart, and allowing 6 inches distance between the plants. A mulching of leaf soil or well decayed manure after planting will act as protection, and assist the growth another season. After they have grown a year or two they may be planted out where they are to remain, or they may stay in the original bed to flower. Transplant with all roots possible. You will see that raising Pæonies from seed is not a quick process, and most persons prefer to purchase plants, which are not expensive, from a hardy plant nurseryman.

Occupation of Man's Time in Houses (W. J. C.).—Everything depends on the sizes of the Orchids, and upon the dimensions of the vineries and house of Carnations; but assuming there are three houses or compartments of Orchids, and the sizes and dimensions respectively are ordinary, there will be plenty of work in the six structures for one man. Of course there will be slack times, as when the Orchids are resting; and, on the other hand, busy times, as when the general potting of the Orchids and thinning of the Grapes demand prompt attention, so that a more or less "give and take," coming we presume under "other jobs," has to be practised, to mutual advantage.

Browallia elata (D. C. C.).—The seedlings should be potted either singly or three in a pot when they are large enough to handle. The latter make fine masses for conservatory or greenhouse decoration. After potting they should be kept on a shelf near the glass in a house with a gentle heat, and syringed every morning and evening to prevent the attacks of insect pests. They should be stopped when a few inches high, repeating when they have grown a few inches, so as to keep them dwarf and bushy, it being necessary to stop them about three times to have well furnished plants. Supply liquid manure, not too strong, after the flower buds appear. They require plenty of light, so as to insure thoroughly solidified growth and a floriferous habit.

Chrysanthemum Cuttings Damping (Perplexed).—The cuttings have simply damped off by an excess of moisture, the soil being wet to soddenness, consequently sour. This has caused the destruction of the tissues, and the decay has spread upwards, so that the cuttings are black level with the soil. The only preventive is to use sweet loam with a third of well-decayed leaf soil and one-sixth of sand, mixed, for filling the cutting pots, surfacing them with the latter, and using a blunt dibbler for inserting the cuttings, so that some of the sand is forced down for the base of each cutting to rest on; a little of the sand will drop about each cutting, or it can be pushed into the hole before closing the soil. With this care and attention to keeping the soil moist, but not overwatering, every cutting ought to root and be healthy.

Weeds on a Lawn (M. P.).—The cause of lawns being thus infested is usually poverty of soil, and a good dressing of short manure may be applied now. In early April scratch the lawn well with an iron rake, and during the earliest prospect of rain afterwards, sow some lawn grass seeds so as to thicken the grasses, distributing most seed on the bare places. If you have no manure apply soot, wood ashes, and quicklime, in equal parts, all dry and well mixed at the rate of a peck per rod, and rake it well in. The manure or some rich compost would be the more effective, as it is ammoniacal or nitrogenous matter, which is necessary to encourage the growth of the grass, and enable it to gain the ascendant. A dressing of soot or some artificial manure would be of great benefit applied at the time of sowing the grass seeds, or nitrate of soda at the rate of 1 lb. per square yard.

Protecting Apricots from Frosts (W. H. S.).—As you want a material that may remain over the tree constantly you can employ a double thickness of herring net. This will break the force of cold cutting winds, arrest and prevent the settling of dew on the tree, and thus comparatively dry, the blossom and young fruit will be preserved from injury. To keep the net from the tree, poles should be set in the ground about 6 feet apart and 18 inches from the wall. They should extend about a foot higher than the branches, and rest against the surface of the wall, securing them with string or nails. The net should be fastened to the wall just above or level with the top of the poles, and let down over the tree, resting on the poles, and reach to within 18 inches of the ground, but be kept clear of it, securing the netting to the poles at the bottom. The netting must extend over the tree sideways and be secured to the wall on both sides, being drawn taut and kept clear of every part of the tree. It should be put up when the first blossoms show colour—that is, appear white—and remain until the weather becomes warm and settled in May, or sufficient foliage has been produced to protect the fruit.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A Weekly Reader*).—Three pretty forms of *Odontoglossum Rossi*; No. 3 resembles *O. R. cœrulescens*. (*J. S.*).—1, *Dendrobium speciosum Hilli*; 2, *D. pallens*; 3, a poor form of *Cattleya Trianae*. (*Young Gardener*).—*Æschynanthus cordifolius*. (*C. T.*).—1, *Helloborus olympicus*; 2, *Ornithogalum nutans*; 3, *Cardamine hirsuta*; 4, *Dielytra eximia*; 5, *Senecio Ghiesbreghtii*. (*A. H. D.*).—1, A well spotted but poorly shaped form of *Odontoglossum crispum*; 2, *O. luteo-purpureum*.

COVENT GARDEN MARKET.—MARCH 7TH,

AVERAGE WHOLESALE PRICES.—FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
" Californian ...	7 6	10 0	Melons, each ...	0 6	1 6
" Canadian, barrel ...	10 0	15 0	Oranges, per case ...	5 0	15 0
" Nova Scotian, barrel ...	10 0	17 0	" Tangierine, box ...	0 6	1 9
Cobnuts per 100 lb....	80 0	90 0	" Californian, seedless	16 0	24 0
Grapes, black ...	2 6	5 0	Pears, Californian, case...	6 0	9 0
" Muscat... ..	4 0	8 0	Pines, St. Michael's, each	1 0	3 6 0

AVERAGE WHOLESALE PRICES.—VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Lettuce, doz. ...	0 10	to 1 2
Asparagus, green, bundle	5 0	5 9	Mushrooms, lb....	0 8	0 10
" giant, bundle	15 0	20 0	Mustard and Cress, punnet	0 2	0 0
Beans, Jersey, per lb..	2 0	2 6	Onions, bag, about 1 cwt.	4 0	8 0
" Madeira, basket ...	2 0	2 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz. ...	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, ½ sieve...	3 0	3 6	" Tenerife, cwt....	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz.	0 8	0 10
Carrots, per doz. ...	5 0	7 0	" French, round, doz.	1 6	0 0
Cauliflowers, doz. ...	2 0	3 0	Seakale, doz. baskets ...	9 0	12 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bushel...	3 0	5 0
Endive, doz. ...	1 6	2 0	Spruce, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs. ...	4 6	5 6
Leeks, bunch ...	0 3	0 0	Turnips, bunch...	4 0	6 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ferns, small, 100 ...	4 0	to 8 0
Arbor Vitæ, var., doz. ...	6 0	36 0	<i>Ficus elastica</i> , each ...	1 6	7 6
Arums, per doz. ...	8 0	12 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	12 0	18 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Borcnias, doz. ...	20 0	24 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Orotans, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	8 0	12 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	1 0	1 6	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	30 0	60 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Marguerites, doz. bnchs.	3 0	to 4 0
Arums ...	3 0	4 0	" Yellow, doz. bnchs.	4 0	6 0
Asparagus, Fern, bunch...	2 0	2 6	Mimosa, per bunch ...	1 6	2 0
Bouvardia, bunch ...	0 6	0 9	Mignonette, doz. bunches	6 0	8 0
Carnations, 12 blooms ...	2 6	3 6	Narcissus, white, doz. buu.	3 0	4 0
Cattleyas, per doz. ...	10 0	12 0	" Yellow, doz. bunches	2 0	3 0
Daffodils, double, doz. bnch	6 0	8 0	" double, doz. bunches	2 0	3 0
" single, doz. bnch.	6 0	12 0	Odontoglossums ...	5 0	7 6
Eucharis, doz. ...	3 0	4 0	Pelargoniums, doz. bnchs	8 0	12 0
Gardenias, doz. ...	6 0	8 0	Roses (indoor), doz....	6 0	8 0
Geranium, scarlet, doz.			" Red, doz. ...	6 0	8 0
bnchs. ...	6 0	9 0	" Safrano, packet ...	3 6	4 0
Hyacinth, Roman, doz. ...	5 0	6 0	" Tea, white, doz. ...	3 6	6 0
Lilium Harrisii, 12 blooms	6 0	8 0	" Yellow, doz. (Perles)	5 0	7 6
" lancifolium album ...	3 6	4 6	" Maréchal Niel, doz.	6 0	12 0
" rubrum...	3 6	4 6	Smilax, bunch ...	5 0	6 0
" longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch	0 6	0 8
Lilac, white, bundle ...	4 0	6 0	" yellow, bunch	1 0	1 6
" mauve, bundle ...	6 0	8 0	" bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	9 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	" dark, French, doz.	2 0	3 0
			" English, doz.	2 0	3 0



SCIENCE AS APPLIED TO NOXIOUS WEEDS.

LET the early summer months be upon us, and we shall take up no agricultural paper without seeing the word "Charlock" staring us out of countenance. In fact, already now there are signs of the invasion, for questions are being asked, and answers given, as to the best way of dealing with this plague. Anything is a plague that usurps the rightful place and nourishment of our crops. Weeds, of course, we expect to contend with; not only the annoying, tiresome Twitch, of which the tiniest scrap will live and grow, but all the host

of summer annuals, that cost the farmer infinite time and money to get rid of.

There are certain weeds peculiar to certain districts and also to certain seasons. On some lands "dodder" is a serious trouble, and spreading as it does with great rapidity it is very difficult to deal with. Beautiful as it may be in the eye of a poet to see a cornfield brightened by the Poppy, the farmer finds it anything but pleasing, and it remains an eyesore all the season, and is a standing joke with his fellow farmers. There is another colour that catches and holds the eye, and that is yellow. Poppies may be destroyed by timely harrowing, but the seed of the Charlock, being more or less oily, will remain buried, and then spring up to full life and activity when least expected. It is the spring corn that suffers from Charlock, and if we could only get the Charlock to start its growth before putting in the seed we could combat the enemy. The plants in an early stage are easily killed. As the plant usually appears simultaneously with the tender corn we are in a difficulty. A good harrowing is the remedy, but possibly the season is one when we fairly dare not harrow. Spring corn will not stand the knocking about that Wheat will.

Of course the old-fashioned plan was to pull out the Charlock in the flowering stage. That was most effectual, but also most costly. We cannot get the labour now, nor can we find the money to pay for that labour. An old hand will bear in mind a field that is subject to this pest, and will contrive so to crop it as to give the hoes every chance; but that often throws the whole course of the farmer out.

"Spraying" is not altogether a new idea. We have seen it used to combat disease in Vines, disease in Potatoes; the Hop gardens of Kent have long been familiar with different "sprays," and it was only this summer we saw an energetic parson who was fighting aphids and other like cattle that infested his fruit trees with a hose and charming preparation, which reached the under and upper side of every leaf. We do not want to "spray" insects; we want to "spray" plant life, and we want something to kill that plant life without injuring the legitimate crop. We have not arrived at this all at once; we could find plenty of Charlock destroyers, but they also proved destructive to other growths. We wanted something fairly simple and fairly cheap, for it was not on flower beds we experimentalised; it is a case of acres and acres.

Our various agricultural colleges took the thing up, and, by patient trials and careful observations, have arrived at some very definite knowledge. We are under obligations to the Editor of the last number of Royal Agricultural Society's Journal for a summary of trials and results. These experiments took in most of the counties of England. In Northumberland, and adjacent counties we find seventeen farms on which trial was made of the new destructor. Essex, Yorks, Cambs, Hunts, Northants, Suffolk, Sussex, Herts, Kent, Cheshire, Lincoln, and 200 other experiments made over the kingdom generally. There appear to be two chemicals equally destructive to Charlock and equally innoxious to other plant life. These two substances are sulphate of iron and sulphate of copper.

The copper is the easier and pleasanter to handle, and will therefore be more generally used, as double the quantity of sulphate of iron is necessary. The strength of the mixture appears to be 4 lbs. of sulphate of copper in 10 gallons of water, and the quantity per acre is estimated at 40 gallons. More has been used, and less, but it appears fairly certain that a larger quantity of greater strength is unnecessary, and that a smaller quantity weaker is not sufficient to kill the weed unless in quite the earliest stage. Some recommend two dressings of the weaker solution, but if the Charlock be taken at the proper time one dressing of 40 gallons of 4 per cent. sulphate of copper should be enough. In very few cases have the experiments proved total failures, and then possibly there is something left untold, the weather, strength of growth, or some other particular equally important. The weather is a great factor in the case. Sometimes it is that Charlock gets such a start because it is simply impossible to get on the land. The day for the operation must be

most carefully chosen. There must be absolutely no wind. A shower coming on say four to five hours after spraying will nullify all desired effects. The plant will not have had time to absorb the poison. A dewy morning is the best time, but the dewy morning must not be followed by too hot a day. Fortunately at that season of the year, when spraying should be in full force, the days are not particularly sultry.

The sulphate of copper should be mixed if possible with soft water in a wooden bucket—keep clear of zinc or iron pails. The knapsack sprayer will answer for small plots, but where the area runs into acres, Strawson's cart sprayer will be found necessary. Why this solution is fatal to Charlock has yet to be discovered. The following crops have been sprayed with the above results. Wheat, Oats, Barley uninjured; young Peas, not permanently injured; Peas in bloom, uninjured; Cabbages, uninjured; Turnips, killed almost as quickly as Charlock; Mangolds, not permanently injured; young Clover in corn, absolutely uninjured; Beans, not permanently injured; Tares, uninjured. We read of crops looking better and healthier after being sprayed for Charlock; no doubt this is because the legitimate crop, is getting more air and space, which is only reasonable.

To some of our readers 40 gallons per acre seems a large allowance but remember every leaf must be wetted. The estimated cost per acre will be about 4s. Mr. Homsley (Laxton Park) compares this favourably with hand pulling, which would come to about 30s. or 35s. per acre. We shall watch with great interest for all reports of spraying during the coming season. No doubt this new method of weed extermination will find (as it should) many advocates. We think at any rate it may prove a way out of a great difficulty. A clean crop should be a better crop, and we think we should more than see our money back at harvest time.

WORK ON THE HOME FARM.

Since the great snowstorm we have had rain almost every day and night; the snow has just disappeared, but the rain is still in evidence in the shape of flood water. Rivers are fuller now than ever; everywhere water meets the eye, and we fear the worst is not over.

Spring sowing is as it stood a week ago. If a favourable change were to come over the weather it would take a fortnight's sun and wind to make even light land fit to sow with Barley. A wonderful transformation must be seen if much of the Barley crop is to be sown before the equinox. We want March winds, and hope that Tennyson's "Raging Moon of Daffodil" may act up to its reputation. March dust is at a premium just now.

There is more work for men than for horses. The manure is all led out, and it is quite out of the question to attempt to go on the land. Delivering corn, bringing in cake and coals are hardly sufficient to keep the animals in exercise, meanwhile work is getting into arrears.

There is plenty of hedging and fencing for the men. Grips have to be cut to let off surface water from low places, and ditches must be kept clear. Field corners may be dug and forked over, whilst all odds and ends of scrapings, turf, and twitch rubbish may be carted into a heap, to be left to decay. Amongst this may be mixed Potato tops that have been used to protect the pies, and any straw from the pies not worth taking into the foldyards. February has seen the English root crop practically finished. We wonder whether such a thing has occurred before within living memory.

We have just come across a ram breeder who is sending gimmer hogs to market in their wool for slaughtering. Nothing but dire necessity would induce him to do such a thing. Grass is growing where there are no mouths to prevent it.

Good fortune smiles upon the lambing pen; the mortality amongst ewes is very small, and lambs are healthy. The fall of lambs is good, and the poorness of the Clover plant will be severely felt when the bulk of the pairs are put upon the seeds. There will certainly be no Mangold left to eke out the poor pasture. We wonder what effect the failure of the Turnips will have on this year's sheep number when the agricultural returns are published.

Eggs keep up in price, although the supply is now materially increasing. The weather has been bad for young chickens. There is nothing suits them like sunshine, of which the supply has not been large of late. Young chicks must not be stinted of warmth.

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50 Seeds of each in separate packets, 1/3.

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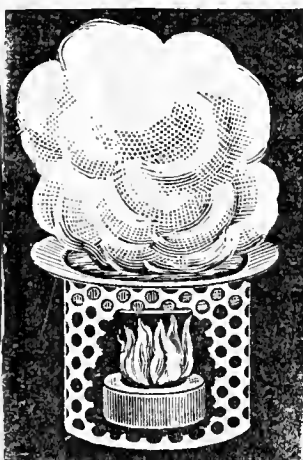
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Journal of Horticulture.

THURSDAY, MARCH 15, 1900.

The Journal of Horticulture can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 12, Mitre Court Chambers, Fleet Street, London.

Gardening in 1900.



CONCISE yet comprehensive and time-honoured definition of a garden, generally accepted, is that of a piece of ground appropriated to the cultivation of herbs, fruits, vegetables, and flowers; a rich, well-managed plot, a delightful spot or appurtenance of the home. The production of all the varied plants and flowers required, with the several crops of vegetables and fruit in the best condition, at the time they are wanted, also the attractive keeping of the home surroundings, is the work of the gardener. The prosecution of all the work that is necessary for accomplishing the end in view is gardening.

What an interesting, diversified, intellectual calling it is. How delightful, too, when all runs smoothly; when everything can be kept neat, trim, and orderly; when there are no impediments to the healthy progress of cherished plants; no lack of the coveted and admired flowers in their seasons; no break in the successional and rotational supply of vegetables; no accidents to prevent bountiful yields of fruit, hardy and exotic, outdoors and under glass. Then, indeed, is the occupation a happy one—health giving, mind inspiring, and exhilarating. It affords a rich reward to the devoted and successful amateur, and enjoyable addition to the not overwhelming emoluments of the thoughtful and industrious professional.

That is representative of the bright side of gardening, and there is not much wonder that, when seen at its best under most favourable conditions, it should exert an attractive force on those who wish to spend their lives amidst pleasant surroundings. Thus it is that amateurs in different grades are in ever increasing numbers becoming interested in the cultivation of various plants which appeal to their taste, as well as of the more substantial products that afford food of the most toothsome and appetising character.

That changes have occurred in the world of gardening during recent years is only the natural result of changing circumstances and varying fashions. We may regret the falling of some

great gardens of the past from their high estate, and the events that contributed to the limitation of the resources by which they were so splendidly maintained. These are misfortunes in which many more than their owners are compelled to share, but the increase of wealth by the mercantile community has been the means of bringing into existence other gardens of different grades, and not a few of them of considerable extent, while thousands more of moderate area, yet highly cherished and liberally supported, have been established during the present generation.

Broadly speaking, it may be safely said that at no period were there so many genuine garden lovers as at the present time, and certainly there were never so many persons engaged in the pursuit of gardening in its diverse aspects and allied industries as is the case now. These remarks obviously have reference to the conduct of nurseries, seed establishments, and market growing areas, as well as private gardens, also to the production of necessities connected therewith. When all these sections are taken into account, as they must be in an estimate of the public taste and requirements, some conception may be formed of the magnitude of the horticultural interest and industry in this country in 1900.

Perhaps in no other way is this more clearly shown than in the current literature bearing on the subject. Every class and section of garden lovers is provided for, from the cottager, artisan, and city clerk—whose few square yards in the suburbs is to him an earthly paradise—to the learned scientific cultivator and the professional gardener and advanced practical amateur. The wants of all are met; simple fare for the tyros with their odd shillings to spend, more intellectual repasts for the savants, substantial provision for the requirements of the wealthier section of the community, and guidance for those intelligent workers with high aims, who are laudably seeking to distinguish themselves in the art that so many adorn. Then, in addition, what can be said of the remarkable abundance and splendid quality of the trade literature connected with gardening? In one word of simple truth, it can be said that it cannot be equalled by that of any country in the world.

All this goes to prove that gardening as a pursuit of pleasure, with its necessary correlative commercial ramifications, is deeply rooted, and becoming more so yearly, in the affections of the people, from the most affluent to the well-to-do; also by the masses, who find agreeable relaxation in it from their daily labour of various kinds, while a greater number of busy workers find the means of livelihood within its sphere of influence than was ever known before. It is even said that the demand for skilled, steady, industrious young men is greater than the supply. This is somewhat of a novelty, and not, perhaps, to be entirely regretted. The vacuum, if such there be, is certain to be filled, and, it is earnestly to be hoped, by bright intelligent men, who are as well educated as they can be by their own exertions, and at the same time hearty and willing workers. Science is good, and examinations are good, but for young gardeners to get on in the world they must, as the Superintendent of the Chiswick Gardens has officially recorded, be also, and especially, *workers*.

That gardening has its checks in the ordinary routine is proverbial. This is a necessity of the case since it is to a large extent governed by ever varying natural influences beyond human control. It is also beset by obstacles of various kinds, with enemies visible and invisible in many forms; but all this and these give zest to the earnest man, affording stimulus to his thought and vigour to his action in efforts to prevent or overcome them, and the more stubborn the difficulties encountered the greater the triumph of success.

Episodes of a general nature are, moreover, always liable to occur to divert attention from our great pursuit of peace, and to draw some of its votaries beyond its influence. Even some of our most valorous soldiers are lovers of gardens; this has always been so, even though they be as wide as the poles asunder in their views on other matters. It is said of Charles I. that only a few days before his trial he ordered seeds of Spanish Melons to be "planted in his garden at Wimbledon," while his successor to that garden, the republican General Lambert, one of the victors at Marston Moor, is said to have been "as fond as the king of his gardens, and possessing the finest Tulips and Gilli-

flowers that could be had for love or money," and also that when the old warrior was banished for life to "the Isle of Guernsey, he there lived for upwards of thirty years amusing his leisure with horticulture." Thus men of the most diverse views generally may be and happily are, united in their love of gardening and pursue it in peaceful friendly rivalry.

Gardeners—those who derive the means of livelihood from it—love it, too, for its own sake. An observant clergyman has written, "Gardeners, though often hardworked, and even weighted with families, perhaps, yet delight in their work and its surroundings. Who besides a gardener reads so much about his business? Tradesmen, as a rule, do not spend their evenings reading about their trades, nor do grooms and gamekeepers about their callings; but a gardener reads his books on subjects of his craft, also the *Journal of Horticulture*, from the pleasure it gives him, as well as because of its help in his calling." It is this love—this devotion, plus knowledge acquired, and resolute action in striving for supremacy, that have largely contributed to make British gardening what it is in 1900. Long may it flourish to exert its wholesome influence on the nation's life.—MENTOR.

The Awakening.

HARSH were the winds and cold the showers that ushered in the month of March; the face of Nature was sombre awaiting the revivifying effect of a softer air and brighter sun. But in a day—almost in a moment—the aspect changed and the more genial conditions were followed by the awakening of plant life from its winter sleep. The hedges bristle with the tender green of the bursting buds, the Almond trees expand their beautiful flowers, the yellow Crocus open wide their cups to the mid-day sun, and the Snowdrop's bells hang in chastest beauty; everything points to the advent of spring, with its many and varied charms. The winter has not, perhaps, been typical, frosts have not been frequent and severe, snow has not come to spread its mantle of purity over the land to any great extent, but the awakening of the plants is none the less welcome or appreciated.

On every hand we can now see that touch of Nature of which poets have sung and in whose praise painters have wielded an inspired brush. We may see this and more. For is there not in the present abundance a promise for the summer and for the harvest? True it is too soon yet for one to hazard a prophecy of what the harvest time will bring forth. We may say, the probabilities are that we shall—have frosts and biting winds to nip the bud and the flower within its delicate casing, but the promise of spring is great, and "hope springs eternal in the human breast." Each season brings to every one of us who is engaged in the oldest art some reverses; each spring we think we can see the bounteous recompense for labour done; and each year some promises remain unfulfilled. Does the gardener lose heart and remain unresponsive to the witchery of spring? Never; no matter how he may have been beset by trials and troubles in the years that have gone he still presses onward and pictures in his mind the plant in all the glorious beauty of its flowers and the tree laden with its luscious burden. The fountain of hope is stronger in none than in the gardener, who tends with loving hand the plants he grows so well.

No months are more fertile of uncertainties in the garden than are March and April—the awakening and the anticipation. From day to day, as the buds enlarge to expansion, we look and hope for fine weather, but can never be sure of what the next twelve hours may have in store for us. Truly gardening is full of uncertainties. The cultivator must ever be on the alert to protect his developing crops from the visitation of a sudden frost, and many are the expedients that have been resorted to in pressing emergencies. Everything, apparently, has been requisitioned for one purpose or another, and if the articles employed have not always been ornamental, let us hope they have proved their value by their usefulness. Certain it is that the man who *acts* is the one who scores in gardening, and he who contents himself with *hoping* the frost will do no harm oftentimes finds himself minus a crop of flowers, or fruit, or vegetables. Every one of us no doubt can recall at least one disaster in our career that might have been averted by prompt action, and probably there are few who have not had to take a turn on a bitter night in covering some cherished crop of Potatoes or flowers in the garden or fruit on the wall. But it has been all for the best, and the gardener becomes somewhat of a philosopher who may gamble a little but seldom fails to do the best he can when the moment for action arrives. Procrastination with a frost in the air at night is liable to prove a thief of other things besides time. We are all rejoicing in the awakening; let us all, then, do our best to make the time of realisation—harvest—a period for rejoicing too.—S. E.

NOTES & NOTICES

Recent Weather in London.—The weather in the metropolis has changed during the past few days. On Saturday the sun shone brilliantly, and the air was almost as balmy as a May morning. Sunday, too, was mild, but the sun scarcely struggled through the haze. There was a suspicion of frost on Monday morning, but the day was mild and fine. Tuesday morning was much colder, and there was a slight dampness in the wind. Wednesday was a typical spring day.

Weather in the North.—Frosty nights and bright days have been the rule for the past week; the 8th and 9th, however, being duller. No rain has fallen, and the frost has put the heavier lands into fine working condition; and the Bean crop has been got in. 6° of frost were registered on the 6th, 9° on the 7th, and 6° on Saturday. Sunday was a beautiful spring-like day; Monday duller, with a coldish wind from the west. A good deal of snow still lies on the hills.—B. D., *S. Perthshire*.

Dahlia Show at the Royal Aquarium.—An exhibition of Dahlias on much the lines of that held last year will take place at the Royal Aquarium on September 18th and two following days. A sum of nearly £30 is offered in prizes—a portion of which has been subscribed by the directors of the Royal Aquarium, and the remainder by private subscription. Two main objects are sought by the establishment of this show—one is to provide an exhibition of Dahlias in central London, the other to afford a convenient opportunity for a further exhibition of seedling Dahlias. Schedules of prizes can be obtained of the superintendent, Mr. Richard Dean, 42, Ranelagh Road, Ealing, W.

After the Siege.—The following prices were realised at an auction in Ladysmith on the 21st of February: 14 lbs. of oatmeal, £2 19s. 6d.; 1 lb. of fat beef, 11s.; 1 lb. tin of coffee, 17s.; eggs, £2 8s. per dozen; a fowl, 18s.; four small cucumbers, 15s.; green mealies, 3s. 8d. each; a small quantity of grapes, £1 5s.; a plate of tomatoes, 18s.; one marrow, £1 8s.; a plate of potatoes, 19s.; two small bunches of carrots, 9s.; a glass of jelly, 18s.; 1 lb. bottle of jam, £1 11s.; 1 lb. tin of marmalade, 1 guinea; a dozen matches, 13s. 6d.; a packet of cigarettes, £1 5s.; fifty cigars, £9 5s.; a quarter-pound cake of tobacco, £2 5s.; half a pound of tobacco, £3 5s. Such figures as these ought to satisfy the most rapacious growers.

Death of Mr. E. J. Lowe.—By the demise on Saturday last, at Shirenewton Hall, Chepstow, of Mr. E. J. Lowe, F.R.S., horticulture generally, and Fern growers in particular, lost one of their keenest supporters. His knowledge of exotic and native Ferns was profound, and in his collection of these plants he found the utmost pleasure. Mr. Lowe was a founder of the Meteorological Society, and his meteorological writings and other labours have a permanent value. He was equally distinguished as a naturalist, and an authority on mollusca as well as Ferns. He was also an inventor. Mr. Lowe was a Fellow of the Royal and many other learned societies. For the greater part of his life he was closely associated, officially and otherwise, with the county of Nottingham. The deceased was seventy-five years of age.

Death of Mr. G. J. Symons, F.R.S.—Many of our readers who have worked in association with Mr. Symons in registering the rainfall in various districts will learn with much regret of his death from paralysis on Saturday last at his residence, 32, Camden Square, N.W. The deceased gentleman was a devoted meteorologist, and his notes of observations appeared in the *Journal of Horticulture* for many years. Mr. Symons was a most diligent and careful worker, and the deserved subject of many marks of recognition. He was the recipient of the cross of Knight of the Legion of Honour from the President of the French Republic in 1891, and the Albert medal in 1897 from the Prince of Wales for services in recording the rainfall. Mr. Symons filled the offices of secretary and president of the Royal Meteorological Society, and had some 3000 coadjutors throughout the country who sent him the reports which enabled him for nearly forty years to publish an account of the rainfall in the British Isles. The deceased gentleman was sixty-two years of age.

Mr. W. J. Bean.—We are informed that Mr. William J. Bean, who has been arboretum foreman at the Royal Gardens, Kew, has been appointed assistant-ecurator for the arboretum. Mr. Bean thus becomes a member of the permanent staff of the gardens, and there is little likelihood of his valuable services passing to another establishment, either at home or abroad.

Royal Meteorological Society.—At the ordinary meeting of the society to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 21st instant, at 7.30 p.m., the following papers will be read:—"The Ether Sunshine Recorder," by W. H. Dines, B.A., F.R.Met. Soc.; "Remarks on the Weather Conditions of the Steamship Track between Fiji and Hawaii," by Capt. M. W. C. Hepworth, F.R.Met.Soc.; "Comparison by Means of Dots," by Alexander B. MacDowall, M.A., F.R.Met.Soc.

Currants as a Food.—Fruit dealers say that London consumes more and more dried currants every year. Recent heavy importations of the fruit certainly tend to confirm the statement. A few days ago one boat alone—the steamship "Benmore"—unloaded at the docks 23,141 quarter-cases and 625 half-cases from Patras, and 5502 quarter-cases and 1376 half-cases from Zante. The quarter-cases are becoming very popular among the small consumers. It seems likely that, as in the United States, the currants will also soon be sold in 1 lb. boxes.

Tomato Disease in Australia.—Several Tomato growers about Sydney, N.S.W., have been puzzled to notice fine healthy plants suddenly collapsing and dying as if struck by a plague. The peculiar disease has recently, says a contemporary, appeared on a large scale in the Gosford district. Specimens sent to the Agricultural Department have been examined, and found to be infested with the "sleeping disease of Tomato, a fungoid known as *Fusarium lycopersici*." The entomologist states that this is a very common disease in England, where it causes great losses to market gardeners growing Tomatoes. It is likely to spread, as if the plants are attacked when in full fruit, as is often the case, the fruit may ripen, and appear, even under the microscope, to be perfectly sound, yet the seeds from such Tomatoes, if planted, will produce diseased plants.

Death of a Distinguished Scottish Gardener.—It is with deep regret that we have to record the decease of Mr. William Hugh Gorrie, late gardener to Sir W. Hozier, of Mauldslee Castle, Lanarkshire, on the 5th inst., aged sixty-five years, after a painful and protracted illness. Mr. Gorrie was well known throughout Scotland as one of our most successful gardeners. Such has been exemplified for many years past in the fine gardens of Mauldslee, where his skill and management have been so much in evidence. The deceased was associated with gardening from his childhood. Mr. Gorrie had capital training under his father, who was gardener at Polmaise, near Stirling, for many years. After making the best of his time as apprentice and journeyman he went as foreman to Luchie, in East Lothian, and was for some years foreman at Tynningham, under Mr. Lee. From there he went to Raith as head gardener to the late Colonel Ferguson, after whose death he went as gardener to Sir W. Hozier. Mr. Gorrie leaves a widow and family to mourn his loss.—M. TEMPLE, *Carron, N.B.*

A Novel Suit.—Some months ago a Mr. John Coleman of Williamsport, Pa., instituted legal proceedings against a Mr. D. E. Gorman, who owns greenhouses directly across the street from Coleman's residence. The plaintiff alleged that the glass sides and roof of the greenhouses are constructed at such angles that at all times when the sun is shining the beams are reflected so that they strike Coleman's plot and the dwelling house with such brilliancy as to render the rooms in the front part of the house and the porch uninhabitable, useless, and unfit for occupation and dangerous to the health of the occupants of the dwelling. Mr. Coleman therefore asked for relief as follows:—First that the greenhouses be declared a nuisance; second, that the defendant be compelled to remove the same; and third, that he be restrained hereafter from maintaining buildings constructed of glass on his premises. The court, after hearing the evidence in the case, gave Mr. Gorman until May 1st, 1900, in which to remedy the matter and do away with the reflection, and stated that in the event of his failure to do this, he would grant the injunction as asked. Needless to say, Mr. Gorman feels that this is a very unjust decision, but he has not taken an appeal. If this is sound law there may be a good many reflections which will land greenhouse owners in court.—("American Florist.")

United Horticultural Benefit Society.—The annual meeting of this association was held at the Caledonian Hotel, Adelphi, on Monday, March 12th, Mr. Richard Dean, V.M.H., occupying the chair in the absence through indisposition of Mr. S. T. Wright. There was a fairly large attendance of members, whose expressions relative to the committee of management proved that the affairs of the society were most satisfactory and in perfectly capable hands. There can be no doubt that this is essentially a benefit and provident society that tends in every way to benefit members of the craft who are also members of the institution. Each of the several funds shows a substantial balance in hand, and the total amount of invested capital now amounts to nearly £16,000. It was mentioned as indicative of the admirable management that the dividends on the several investments exceeded by upwards of £20 the whole of the expenses for the year. We shall give fuller detail in our next issue.

Blyth Gardeners' Society.—Mr. Mallender, Hodsock Priory, recently gave an excellent lecture on "Daffodils." The room was well filled by an appreciative audience. The lecturer dwelt chiefly on the history of the flower, going back 3000 or 4000 years. He mentioned the names of several ancient and modern poets who have sung the praises of its beauty. The Daffodil is found wild in Great Britain, also in Southern and Central Europe, on the shores of the Mediterranean, China, and Japan. There are about 400 varieties named, the prices varying from one halfpenny to 12 guineas each, and some are quoted even higher than that. Up to a very few years ago we were dependent on the Dutch for our supply of Daffodils, and even up to the present day the Dutch send enormous quantities to meet our requirements. There are, however, several growers who have taken up the cultivation of the Daffodil at home, and Mr. Mallender drew special attention to the soil in and around Blyth as being in every way suitable to the cultivation of the favourite flower. He fully described the modes of cultivation. A hearty vote of thanks was proposed to the lecturer by the Rev. C. E. Scott Moncrieff, and carried.

Reading Gardeners' Society.—The large attendance of members present at the fortnightly meeting of the Reading and District Gardeners' Mutual Improvement Association on Monday last testified to the increased interest which is now being taken in hardy flowers. The subject for the evening was "The Formation and Arrangement of a Hardy Border with a List of Plants Suitable for Same," by Mr. D. Harris, gardener to Col. Jekyll, Munsted House, Godalming, and it is needless to say that the paper was of a very practical character. The lecturer described the best sites, formation of same, soil, suitable plants and their arrangement, time of planting, and many other essential points. A large number of questions were asked, and an interesting discussion followed. A feature of the evening was two splendid floral exhibits by Mr. F. Lever, The Gardens, Hillside, Reading, and Mr. W. Townsend, The Gardens, Sandhurst Lodge, the former staging *Azalea indica alba*, *A. Deutsche Pearl* (grown from cuttings), *Doronicum caucasicum* (grown in pots), and a splendid flowered *Dendrobium nobile*; whilst the latter staged a beautiful group of *Begonia Gloire de Sceaux*.

Sandy Horticultu Society.—The recent annual meeting, under the presidency of Mr. J. F. Love, was well attended. Mr. Sills, assistant secretary, read a report and balance-sheet, which were most gratifying as showing marked success and all-round advance. The income is now over £1000, and whereas at the first show in 1869 only £64 13s. 9d. was paid in prizes, last year the total was £439 15s.; in the former year the gate-money was £27 19s. 3d., and last year it went up to £416 11s. 4d. £100 was added to the deposit account in the bank, making a total of £175 11s. 2d.; there was £3 2s. 4d. in the treasurer's hands, and subscriptions in arrear, thought to be good, amounted to £5 10s., so that the total assets of the show are now £184 3s. 6d. The chairman considered this a most satisfactory position, and the reports and accounts were unanimously adopted. It was agreed to ask Mr. R. O. Fordham of Broom to be president for this year, and Major Shuttleworth's name was added to the president's list. A hearty vote of thanks was accorded to Mr. Gerald D. Smith for acting as president last year. The chairman, in proposing a cordial vote of thanks to Sir Robert Edgecumbe for the use of his park for the show, said that was the essential item for the success of the show; for during its career of thirty years it was only out of Sandye Place once, and that very nearly killed it. Hearty thanks were also accorded to the rector for opening his grounds to the donors of special prizes, and to the committee and officials.

Metropolitan Public Gardens.—At the last monthly meeting of the Metropolitan Public Gardens Association a vote of condolence was passed with the family of Mr. J. T. Bedford, who died at an advanced age. He had been vice-chairman of the organisation from its inception. It was reported that the purchase of Dollis Hill Estate as a public park had been completed by the Willesden District Council, and that another scheme for the purchase of the Alexandra Park and Palace for public recreation had been revived with some prospect of success. It was stated that among other work of the association it was engaged in laying out St. Mary's Churchyard, Plaistow, and Christ Church Churchyard, Blackfriars, as public gardens, and would shortly begin the formation of a children's playground at Sumner Road, Camberwell.

Hessle Gardeners' Society.—A fortnightly meeting of the above society was held in the parish schoolroom on February 27th, Mr. Mason in the chair. A very interesting and suggestive paper on horticultural exhibits and point judging was read by Mr. J. P. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft Gardens, Hull. The essayist, in a few well chosen remarks, referred to the necessity of a method of point judging, which should be established on a system that would be applicable to groups, specimen plants, cut flowers, and vegetables much in the same way as is occasionally done with fruits. He also stated very definitely that the true value of every individual point should be found in the exhibit. An interesting discussion ensued, which brought an enjoyable evening to a close. The committee is doing its utmost to establish a summer show in connection with this society. The efforts have so far been favoured with the generous support of the public. In addition to receiving the support of the president, A. Wilson, Esq., other influential gentlemen have promised their patronage.—J. F. D., York.

Bristol Gardeners' Association.—The usual fortnightly meeting of the Society was held at St. John's Parish Room, Redland, on Thursday, 8th inst. A large attendance was presided over by Mr. Chas. Lock. Mr. R. Stewart, Sneyd Park, provided the paper, which was on the subject of "Peaches and Nectarines." He disclaimed at the outset any intention of dealing with the culture of the fruits in the open air, and confined his remarks to orchard house culture. Handling the subject in a masterly way, he described the structure he thought most suitable, the method of preparing the borders for planting, the soil best suited to the plants, and the time and manner of planting. He also gave a good deal of information respecting the pruning and training of trees, root-pruning, disbudding, and thinning of fruit, also urging care in watering, that the trees may never get quite dry on the one hand or very wet on the other. Mr. Stewart concluded an able paper by enumerating the varieties he thought most useful and the many pests to which Peaches were liable. A good discussion followed, and Mr. Stewart was accorded a hearty vote of thanks on the motion of the chairman. Prizes for three Hyacinths were awarded, Mr. Price first, Mr. Pidgeon second. Certificate of merit went to Messrs. McCulloch and Quick (each for a fine specimen of *Cœlogyne cristata*), Mr. White (*Cymbidium eburneum*), Mr. Cutler (*Dendrobium Wardianum*), Mr. Price (*Dendrobium nobile Cooksoni*), and Mr. Quick (*Dendrobium nobile*).

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day. Night			At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1800.										
March.										
Sunday.. 4	N. E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday.. 5	N. E.	36.6	34.4	39.5	35.3	0.01	40.8	42.7	44.1	33.8
Tuesday 6	N. E.	38.0	35.8	39.5	35.2	—	40.4	42.4	44.1	31.1
Wed'sday 7	N. W.	38.4	36.0	39.3	37.6	—	40.5	42.2	44.0	35.3
Thursday 8	N. W.	36.9	33.9	41.9	34.8	—	39.9	42.1	43.9	32.9
Thursday 8	E. N. E.	36.9	34.8	41.4	37.1	—	40.6	42.1	43.9	34.5
Friday .. 9	E. N. E.	40.5	36.7	46.1	37.2	—	40.1	41.9	43.9	33.3
Saturday 10	E. N. E.	43.9	41.1	55.4	38.8	—	40.5	41.9	43.9	32.9
MEANS ..		39.2	36.1	43.3	36.6	Total 0.01	40.4	42.2	44.0	33.4

A week almost without rain, dull, and sunless, with cold north-easterly winds.



Zygopetalum Balli.

THE number of new *Zygopetalums* that find their way to the Drill Hall or, for the matter of that, to any exhibition, is comparatively limited, and one is, perhaps, as a consequence received with the greater pleasure. On Tuesday, February 27th, *Z. Balli* (fig. 55) was shown before the Orchid Committee of the Royal Horticultural Society, and received the award of merit. The flower is decidedly handsome, and distinct from all other members of the family. The sepals are rosy carmine with a white base and margins; the petals are of a similar shade, but the colour is not in one mass, but is divided into spots at the tips. The central portion of the lip is deep crimson, and the front lobe is pure white. The exhibitor was G. S. Ball, Esq., Wilmslow.

Cypripedium Ashworthæ.

The hybrid *Cypripedium* named *Ashworthæ* (fig. 56) was first exhibited by E. Ashworth, Esq., Wilmslow, Cheshire, in the autumn of 1893, when it was honoured by the Orchid Committee of the Royal Horticultural Society with an award of merit. It was said to be the result of a cross between *C. Lceanum superbum* and *C. selligerum majus*, and the flower is of an attractive appearance. The dorsal sepal is very fine, chiefly white with a green base spotted purple. The petals and lip are of a rich bronzy purple shade. This information will no doubt meet Mr. R. Browne's requirements.

Odontoglossum lyroglossum.

Botanists find little difference between this and *O. luteo-purpureum*, and possibly they are in the right of it from their point of view. All the same it is easy enough to pick the plant out, and it is quite distinct from all other varieties of this very variable section. The petals come almost at a right angle with the dorsal sepal, and the lip is usually a

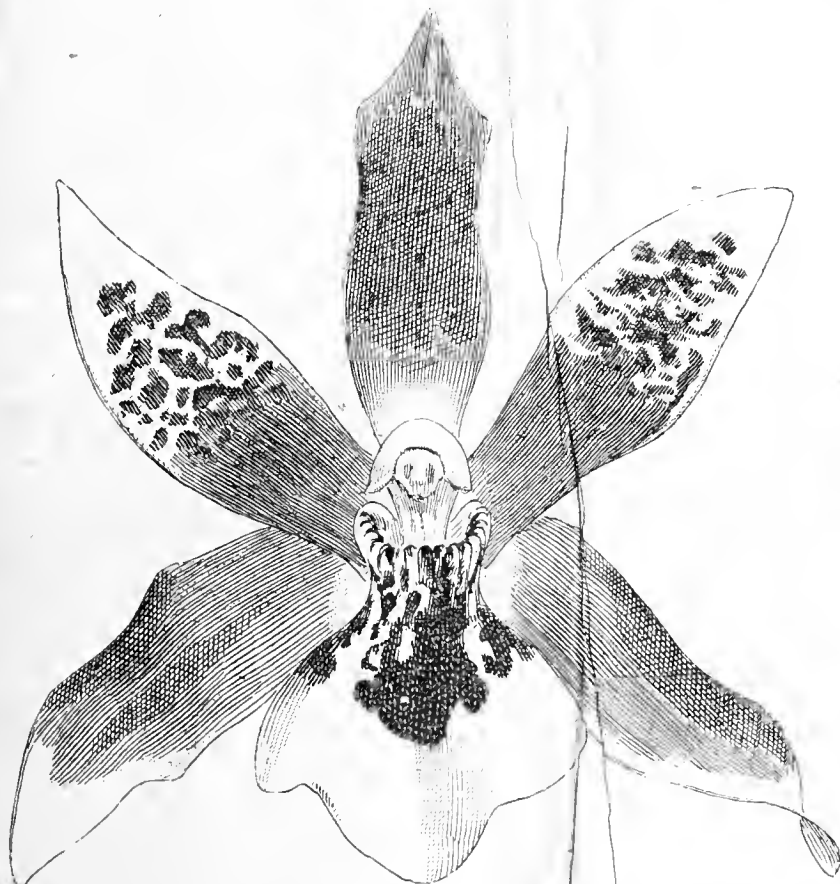


FIG. 55.—*ZYGOPETALUM BALLI*

little rolled. The brown spots on the yellow ground are clear and well defined, and altogether it is a variety well worthy of care and attention.

Orchids for Cutting

Those who cultivate Orchids simply for the sake of cut flowers are at a great advantage culturally to others who grow for a lengthened display in the houses. This, for the obvious reason that many plants of not over-strong habit have yet vigour enough to produce and perfect blossoms, but to carry these over a few weeks would prove too great a strain. Their increasing popularity for this purpose is a better argument

in their favour than any encomium I could pass upon them, and a brief list of the best of those to keep up a display throughout the year will be more serviceable.

Of the highest importance in this connection is the beautiful *labiata* section of *Cattleya*. Their culture is so simple that even a tyro in Orchid growing will be able to keep them in health, and if he does this they are sure to flower profusely. The only exception to this rule is *C. gigas*, which does not flower freely in all collections, but is not shy if properly treated. Besides this and *C. labiata autumnalis* we have *C. Dowiana* and its better known variety *aurea*, *C. Eldorado*, *C. Gaskelliana*, *C. Luddemanniana*, *C. Mendeli*, *C. Mossiæ*, *C. Percivaliana*, *C. Trianae*, and *C. Warneri*. All these are variable, and given a good selection of each there will be little difficulty in keeping up a display of flowers throughout the year.

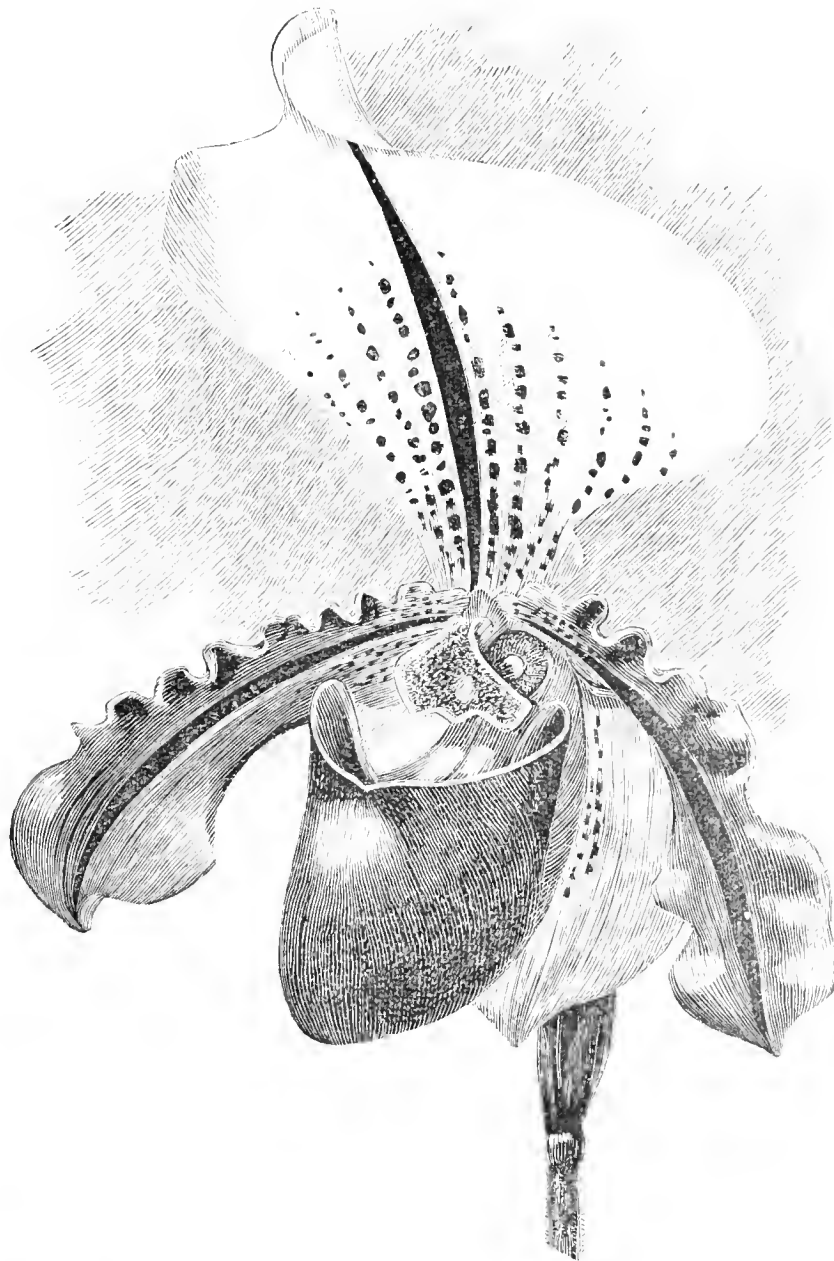


FIG. 56.—*CYPRIPEDIUM ASHWORTHÆ*.

Cypripediums of course cannot be left out of a list of this kind, but so numerous are they that nothing like a representative collection can be grown in most places. Many of the hybrids raised from the older free-blooming kinds are excellent for the purpose indicated, and these old ones themselves ought not to be forgotten. Any of the hybrids that have blood of *C. insigne*, *C. barbatum*, or *C. villosum* are good, and the newer *C. Charlesworthi* is excellent. All may be used again and again for decoration if the water is frequently changed, while the culture is remarkably simple.

Early in the year the well-known *Coelogyne cristata* is capital for cutting, the pretty white flowers on light elegant sprays coming in usefully for every purpose for which cut flowers are likely to be needed. *Dendrobiums* are a host in themselves, whether it is the spring-flowered species with small fascicles of showy flowers like *D. nobile*, *D. Wardianum*, and a number of others, or the lovely autumn and winter-flowering species such as *D. phalaenopsis*, *D. bigibbum*, and *D. Johnsoni* (*D. Macfarlanei*).

Lælias such as *L. purpurata* and the Mexican species and varieties, almost the whole of the large *Odontoglossum* family, and the equally beautiful *Oncidium*; the showy *Masdevallia*, *Sophranitis*, *Epidendrum vitellinum*, and *Lælias harpophylla* and *cinnabarina*, all with bright orange or scarlet blossoms, cannot be left out, and there are many others that might be named.

Into the culture of these it is not necessary to go now, but a few of the leading points should be noted whether the plants are to be

grown in the Orchid house proper or in a structure devoted to stove or greenhouse plants or Ferns. Cleanliness of the plants is of first importance, and in all cases it is safer to keep them rather under than over-potted. Water liberally through the medium of the atmosphere, but do not overwater the roots. Use all composts of the very best description; it pays in the end even if the first cost is higher, as it is so much better for the plants and more lasting. Remember that it is always easy to retard a plant that seems likely to be too early, but it is impossible to force a cool house Orchid with any likelihood of success.—H. R. R.

London Gardens over Fifty Years.—No. 20.

TRAVELLING along the Uxbridge Road, after passing Bayswater and Notting Hill, we come to Shepherd's Bush, and the name makes us smile. The locality in 1900 does not help us to picture a shepherd sitting under a big bush or tree, having a rest, perhaps a read or smoke, his dog by his side, and his flock quietly grazing around. It seems a fancy, yet something like it was a fact not so very long ago. About this district of the suburbs there used to be extensive pasture lands, and it had its shepherds, even as Notting Hill could show its Nut copses, which suggested the idea that it took its name from them; but, more probably, authorities trace it to the old manor of Knotting-barnes. This was standing at the beginning of the century, being occupied as a farm; the public road to Kensal Green ran through the farmyard.

Along the meadows to the north cattle and sheep were numerous; though scarcely three miles from London, says one, you might have fancied yourself in a sequestered part of the country. Few sounds were to be heard except the tinkle of the sheep bell, or the songs of the lark, linnet, and nightingale. But fifty years ago people had discovered it was more profitable to grow vegetables than to have the land in grass, and some of it, too, began to be built over. Wormholt Scrubs, incorrectly called "Wormwood," is an outlying portion of the estate, still a somewhat wild tract of nearly 200 acres. Part has for a considerable period been devoted to State or military purposes; a smaller portion is, I believe, to be laid out as a garden by the London County Council.

Upon a plot of land at Notting Hill, which was parish property, and bore the name of Charecroft, there existed an old nursery which I can just remember. Its last occupier, I believe, was a Mr. Middlemist, and it then bore the title of "Cape Nursery." This was one amongst others so-called, at a time when South African plants were much sought after, and travellers wandered in quest of them through regions which now resound with the tumult of war. From what we read descriptive of home life in the districts colonised chiefly by the Dutch, it does not seem that the modern Boers have inherited the love of florists' flowers which was conspicuous amongst their ancestors in Holland, and, indeed, still exists there. But there never has been much about Notting Hill to interest gardeners, excepting, indeed, some of the squares, which have trees and shrubs judiciously arranged.

About 1850 many were desirous of getting a peep at the gardens of Campden Hill House; so much had been done there within the small space of 4 acres by the gardener to the Dowager Duchess of Bedford. As a matter of course, Holland House, on the Kensington side of the hill, has always had its horticultural memories. No longer can it boast the "deep seclusion," which so charmed Walter Scott. Part of the grounds has been cut off for the erection of villas; the residence, long associated with the Holland family, is now occupied by Lady Ilchester. Through many years the garden has been in the charge of Mr. C. Dixon.

Nothing beyond a passing mention can be made of this historic mansion and grounds, which some years ago served as subject for a splendidly illustrated volume. There are fine Elms and Limes, also a few good Cedars, but many trees and shrubs have suffered from the fogs of London, which often seem to settle thickly about the locality. The square used to make a show in summer with Oranges and other tender trees which were brought out of the houses at that season. In the large conservatory, which has a banqueting room attached, there has always been a choice assortment of plants; the Orchid house, 90 feet long, and the series of forcing-houses were indicative of wise selection and skilled management. Box was, and is, much in evidence—scattered trees of it, hedges, edgings; some of the latter are said to have been growing nearly a century. Several years ago it was the fashion, along the greater number of the flower beds, to have the plants all of a dwarf character, to preserve the outline. Now, however, modern styles are mostly followed. It would indeed astonish the eighteenth century worthies who wandered amid its shady walks to see the display of summer flowers at Holland House. The Dutch garden is a choice relic of the past, with its intricate pattern of beds, and walks occasionally too narrow to be trodden separate some of

these. Letters, animals, and scrolls come into the design, while angles exhibit balls of Box or Evergreen Oak. Many rare shrubs were planted by Charles Hamilton, of Pain's Hill, who may have been the planner of the circular rosery.

Old Oak Farm, lying north of the road to Acton, seems to have gone the way of most suburban farms. Oak hedges really did bound some of its fields, which are rather unusual near London. The name of Oaklands still remains attached to some residences. Evidently woods or copses of Oak were common hereabout, spurs thrown out from the great forest of Middlesex. Some assert, indeed, that Acton was originally "Oak-town." Willows and Poplars also flourish in this district, which was formerly crossed by various streamlets running towards the Thames. Even the Rose appears at one time to have been freely grown on a spot to the south of the Acton Road, for there was a nursery called Rose Gardens existing thirty years ago. Perhaps Acton itself has its Roses, for there is a Rose-mont Road there, in which is the nursery of Mr. Capper.

But this suburb has never been so notable as some are for its nurseries and market gardens. One firm of repute was that of Reeves, who formerly had offices in Notting Hill; they were large importers and growers of bulbs, Tulips especially, their grounds being at Acton. It is said they sent out in some years more than 150,000 Tulips alone, but the business has ceased to exist. Reeves' garden now forms part of Acton Park or recreation ground, towards the purchase of which £5000 was given by the Goldsmiths' Company. Laundries now occupy the site of the nursery once belonging to Mr. Puttick, and that of Mr. Day, in Acton Lane, towards Chiswick, also that of Mr. Jennings, Acton Green, while the orchards and gardens to be seen at South Acton twenty years ago have been cleared for the builders. Towards Gunnersbury there yet remain two or three small nurseries, and Mr. Morris still has, in Church Road, an establishment well known locally.

Probably in a short time the remaining market gardens on the Rothschild estate will disappear, and the few fields left about Strand-on-the-Green be covered with houses. To many living at the west of London this little suburb on the Thames is quite unknown. Gunnersbury Park may be considered secure from the builder; its Orchids were often talked of at a time when that group had few cultivators. Visitors have also sought it to see Kent's handiwork, who laid out the pleasure grounds in the reign of George II. Then its orangery was considered one of the best in Britain. It had besides a remarkable Tulip Tree, a very large Magnolia grandiflora, and two Tree Ferns (I forget the species) of exceptional size. The stoves and forcing houses have for almost a century had a high repute.

Amongst those who represent horticulture at Ealing, we are tempted to put first the name of Mr. R. Dean, V.M.H., of Ranelagh Road, though we cannot ascertain that his is the oldest of the nurseries in the district, which are not numerous. About twenty years ago somebody said Ranelagh Road was famous for Pansies, Polyanthes, Primulas, and choice Potatoes; but Mr. Dean certainly takes a range beyond that letter of the alphabet! He takes much interest in the Dahlia and the Chrysanthemum. Just now he is actively assisting the promotion of the Sweet Pea bicentenary.

Concerning the Sweet Pea, I note the fact as singular that Loudon, in his "Encyclopædia," simply gives it a place under the index, saying nothing about its culture or varieties, perhaps thinking it needless. But it has long been a popular flower with the Londoner, though now he frequently has higher aspirations, and seeks showier or costlier plants. In some places the Everlasting Pea is the favourite, because it flourishes and spreads from year to year. Strolling with a friend in a rather populous suburb he called my attention to a shop window which had a bill, "Pea sticks sold here." "Whatever can they want with Pea sticks hereabout?" said he, laughing. Then I explained that the folks of that district did not, of course, grow the edible Pea, but had a pride in getting rows of Sweet Peas along their back gardens. Mindful of the partiality of sparrows for the seeds they often took the trouble of sowing them in pots, keeping them indoors till the young plants could be transplanted.

The long-standing firm of Messrs. C. Lee & Son has still a branch at Ealing, but the extent of ground has been diminished of late. Ealing Dean used to draw visitors to the grounds of Mr. Smith, noted for his Cyclamens, of which he sent out above 10,000 some seasons. He had a large house devoted to Poinsettias, and Solanums were a specialty; he also had many thousands of Begonia weltoniensis, and various Cinerarias. Fuchsias, too, occupied an important place, having a large sale. This nursery has, I believe, ceased to exist, though a Mrs. Smith carries on a florists' business in Ealing Broadway. In Matlock Lane we find the nursery of Mr. Cannon; and that of Messrs. Hart Brothers is in the Grove. Ealing Park, well known forty or fifty years ago on account of its extensive collection of plants, which Mrs. Lawrence, the occupier, allowed the public to inspect once a week during the summer, has undergone changes since that time. Its extent has been reduced but the market gardens and orchards of the locality have yet resisted the builder.—J. R. S. C.



Seedsman's Guarantees.

To call a plain statement of fact "quibbles" is neither argument nor the best of taste, nor does the fact that "A. D." has only a limited knowledge of a subject render it incomprehensible, at least to others. His statement that 99 per cent. of the seeds supplied at the present date are good and true to description is perfectly correct; but we have it also on reliable authority that about the same proportion of the population of these islands are—well, not wise men. Any good seed firm would gladly guarantee their seeds if they could insure their being properly tested, but to guarantee the crop under all conditions of climate, or folly and incompetence on the part of the sower, is quite another matter. I could give enough instances bearing on this to fill the *Journal of Horticulture* were it worth while, but perhaps it would not serve any useful purpose. Those who wear the shoe generally know best where it pinches; and seedsman wisely prefer not to leave themselves entirely at the mercy of any person who may seek to cover his incompetence through legal proceedings.—CHAS. E. PEARSON.

Judges and Judging.

MANY times in the past has the subject of "Judges and Judging" been discussed in the *Journal of Horticulture*, though evidently, in the opinion of "An Inquisitor" (page 179), it has not been "thrashed out." Possibly it never will be to the satisfaction of everybody, but that is no reason why any ambiguities that may exist should go on without protest, or suggestions for improvement.

As to the question of "the same judges being employed year after year in the same classes at the same shows," may we not reasonably suppose that if, and when, such is the case, the continuation of their services is based on the fact of their having given satisfaction to the committees of the respective societies, as well as to the general body of exhibitors? If this is so, why should not such judges be re-chosen if it be the desire of the electors? If "An Inquisitor" were one of these judges in whom confidence is reposed because his competency and integrity had been fully tested, would he, in view of those facts, think it right to be superseded by, it might be an equally good adjudicator, but one who had still to prove himself so for the purposes desired at that particular show?

Is it not probable that no persons know so well as the secretaries of societies the measure in which the annually chosen adjudicators are trusted? The officials have protests to deal with and if these are many, and sustained, changes would be imperative; but if few or trivial, would not the officials be justified in relying in the main on men of proved capacity, or in other words, trusting to the bridge of proved soundness for bearing the strain to which it must be exposed?

If your correspondent had entered a protest against the judges who had, year after year, proved their fitness for dealing with particular classes being transferred to others for which they were less fit, would he not have been on firmer ground? Most people, on reflection, must surely be inclined to think so.

It may be urged that if the same judges always act at a particular show there can be no chance for younger men to share in the work of adjudication. That is quite true; but as a matter of fact changes are made at most of the shows he mentions, some gradually, others more generally. Personally, I think it advisable to bring in fresh and younger men to act with the "old stagers," but committees are often loth to make experiments, as they say, in that direction; still, in some way or other intelligent young men who have experience of shows and are acquainted with the cardinal properties of exhibits, seem to gradually and naturally come to the front as adjudicators.—AN EX-SECRETARY.

I WAS delighted to read the views of "An Inquisitor" on this subject on page 179, for they have arrived at a most opportune period—a time when most small societies are selecting their judges for the summer and autumn shows. It is a matter that has often occurred to my mind, but I have never thought of ventilating my views in the pages of the *Journal of Horticulture*. I quite agree with your correspondent that the same judges should not officiate year after year at the same show. As a judge I have attended and adjudicated at twelve successive exhibitions, and perhaps some of your readers have acted in the same capacity for twice that number of exhibitions.

My chief objections are that the judge, or judges, become well acquainted with the committee, the majority of whom are exhibitors; this gives rise to unpleasant remarks by some of the outside exhibitors,

doubtless without reason, but still the fact remains. Again, the same exhibitors stage at their show annually, and the judge, however much he may try to avoid it, soon recognises the style, yes, and even individual plants; and where the competition is keen and the prize of considerable value, it is sure to harass the judge more or less. I am also acquainted with a Chrysanthemum show where one exhibitor has staged in precisely the same spot for five years in succession to my knowledge, and as in this case it is a group of plants, I cannot fail to recognise it every year, as does my fellow judge, who has officiated for nine years. At the same time it is gratifying to know our decision has never been questioned. In this instance I suggested to the secretary that it would be wise to have a change of judges, but the committee scouted the idea, and I have no doubt this has occurred in dozens of other cases.

In my opinion the judges should not act at a show more than two years in succession—not that I think it interferes with their judgment, but it gives greater confidence to the exhibitors and does away with that petty carping that I am afraid is too prevalent at our shows, though it is now rare to hear much grumbling from the exhibitors; whatever they may think it is pleasing to find the majority keep their opinions to themselves, or express their views privately.—AN ESSEX JUDGE.

Apple Duke of Bedford.

FOR several years I have been seeking information about the origin of the above-named Apple, but up to the present I have failed to obtain any definite statement concerning its history; nor can I find a collection, either trade or private, which includes it.

In Dr. Hogg's fifth edition of the "Fruit Manual" it is described on page 64, and it is there said to be "a first-rate kitchen Apple, in fine condition at Christmas, and will keep till February," but nothing is said about its origin. I have all the editions of the "Fruit Manual" except the fourth, and the variety does not appear in the first, second, or third, so I take it to be a modern variety, as the third edition was issued in 1866 and the fifth in 1884. I shall be obliged if any correspondent could give some information about the variety, and if the late Dr. Hogg's manuscript is still in existence possibly the Editor may be able to find a clue.—R. LEWIS CASTLE.

[This Apple is not included in the fourth edition of the "Fruit Manual," and nothing relating to the history of the origin of the variety can be found amongst the MS. left by the late Dr. Hogg. Perhaps some of the experienced readers of the *Journal of Horticulture* can supply the information Mr. Castle desires.]

The Sweet Pea Bicentenary.

AT last one of our most charming garden flowers is to have its due. After years of almost absolute neglect a number of horticulturists have come together, and will endeavour, by the aid of an exhibition and a conference, to reduce order out of chaos—at least such is what I gather from a copy of the proposed scheme. I feel I must, in the pages of the *Journal of Horticulture*, congratulate the prime movers and wish them unqualified success. The names of those managing the affair are largely unfamiliar to me, but I recognise sufficient to assure me that this is not a trade move, but a loyal effort to increase the popularity of this beautiful plant amongst all classes of growers.

I have seen the displays of Sweet Peas that are brought together at Wolverhampton and Shrewsbury, and have often thought what a splendid spectacle would result from a show devoted solely to them. I am now hoping the weather will be propitious, and that the fates will permit me to be in London on July 20th, in which case I shall soon find my way to the Crystal Palace. I should like to see myself amongst the exhibitors, but am very doubtful if this wish will be realised, as I have not been successful enough to produce flowers good enough for staging so far. However, I must redouble my efforts this year, as I hope every Sweet Pea grower will do, so that I may, with good fortune, be enabled to support a movement with which I am so entirely in sympathy.

I have had a glance through the preliminary schedule, and find that there are several classes to which the smaller amateur can devote his attention. As a rule the classes scheduled for Sweet Peas are slightly beyond the growers here alluded to, but in this instance they have every consideration shown them. The prizes throughout are of exceptional generosity, and should be productive of the keenest competition. If the entries prove very numerous I venture to predict that the exhibition will be one of the most beautiful that has ever been held in the Crystal Palace, or for the matter of that, out of it either.

So far I have heard nothing very definite relative to the Conference, but presume it will take the form of three or four short papers and subsequent discussions. These should prove valuable, and I trust the Committee will see its way to print the papers and discussions verbatim in pamphlet form at a price of 3d. or 6d. The proposed classification of the varieties might also be advantageously embodied. There must be some record, and this seems to me the best means.—A. J. R.

Pentstemons from Seed.

IN a note on Pentstemons at page 184, it is stated that "March is rather late to sow seed to obtain plants to flower the same season." That is, however contrary to my experience, for I used to raise several plants yearly from seeds sown in a cold house early in March, getting in that way strong plants several inches in height, and planting out at the end of May. From these plants, which were simply dibbled out and if dry watered once or twice, I invariably obtained strong ones that bloomed freely through the autumn right up to November. I mention this because it is well that those who like Pentstemons, and either lose the old plants in the winter or do not care to keep them, may always have a fine show of bloom from plants raised as described in March for fully three months in the autumn. If some seeds be sown in a box or frame at the end of August strong young plants are ready to put out at the end of March, and these will bloom through June and July. We have now some fine strains of Pentstemons.—GROWER.

Pinching Fruit Trees.

A "LEARNER," who appears to know a good deal more about the Woturn experiments, as well as claiming acquaintance with the methods of many and extensive fruit growers, than "learners" know generally, confesses, on page 179, to being "staggered" by what I ventured to advance on the rationale of shoot-pinching on page 154. It is something to "stagger" such a widely experienced "Learner," and it could not have been done in the absence of impairment of his mental digestion. He tells us he has read "carefully" the article that was too much for him. Perhaps he read it too quickly; be that as it may, he has evidently not assimilated it. As a matter of fact, he has missed the point and so based an argument, or rather evolved a deduction, from a false hypothesis entirely of his own invention. This may be put to his credit, as it is not easy to be the real originator of anything in these days, in which so many try and fail. Says this Learner, "if it would pay to pinch a quarter of an acre it would pay to pinch a thousand acres" (of fruit trees). His proposition would have been as good had he started with a quarter of a tree as with that portion of an acre, for when he acquires the art of pinching, or finger-and-thumb pruning as it has been described, in its integrity, he will be able to have a quarter of a Peach tree bearing its crop of fruit from short stubby spurs and the other three-quarters from natural summer shoots in the usual way. As to which method would "pay" the better in view of the time involved in the operations, is another matter entirely.

So it was as clearly stated in my article bearing on the subject of pinching trees for a specific purpose and positions. A "Learner" is wholly wrong in his implication that I "advocated" systematic pinching as being more profitable than simpler methods of procedure. I did nothing of the kind. I suggested the contrary, as my critic really admits. Well may he be "staggered," such mental confusion as I happen to have extracted would be enough to stagger any man. I did not "advocate" a general principle to be followed in economic fruit production at all, but explained a method, by request, as applicable to the production of fruitful trees limited to small prescribed spaces in gardens.

When a "Learner" has learned much more in the school of experience he will find that trees are like men, varied in their habits and proclivities, and that all are not amenable under all circumstances and with differing objects in view to precisely the same treatment or training. Some are pliable and easily governed, others are more or less angular and known in nurseries as "awkward." Of course I mean trees, though the remark may, perhaps, apply to men, and some of these—so do men vary—might even be disposed to assume that the thoughts of my peculiar critic were not exclusively devoted to fruit trees, but also in a gentle way to "pinching."—A LINCOLNSHIRE GARDENER.

Cyclamen Culture.

HAVING noticed several articles in the pages of the *Journal of Horticulture* dealing with the culture of Cyclamens, I thought I would give my method of cultivation, as it differs somewhat from any I have seen described.

I usually sow the principal stock of seeds during the first week of October, again for a succession in December or January. The seeds are sown in shallow boxes $2\frac{1}{2}$ inches or 3 inches deep. Empty champagne cases do admirably if cut to make two boxes, one $2\frac{3}{4}$ inches deep, and the other $4\frac{1}{2}$ inches; the latter I find useful to grow them in later on. The size I use are about 20 inches long by $13\frac{1}{2}$ inches wide, which accommodate about 100 seeds at $1\frac{1}{4}$ inch to $1\frac{1}{2}$ inch apart all ways. The boxes must be thoroughly drained and have a few rough leaves laid over the drainage. I fill the boxes nearly to the edges with a mixture of equal proportions of rough leaf soil, not sifted, and rough turfy loam with sufficient sand to insure porosity, and the soil is pressed firmly and evenly; on the top about a quarter of an inch of the same

mixture passed through a fine sieve is scattered in which the seeds are distributed in small holes made with the finger at the requisite distances apart; the seeds are then covered with a layer of the fine soil.

A thorough watering through a fine-rosed water pot must then be afforded, and the boxes can be placed in any cold but frost-proof pit or frame, and may be stacked on each other if several are sown at the same time, with a slate or pane of glass on the top one. This will keep them uniformly moist. If the seeds are sown the first week in October (or earlier) the boxes should remain in the cold pit for a fortnight, being examined occasionally to see that they do not become dry. They should then be removed to a structure where a temperature of 55° to 60° can be maintained, and the majority of the seeds will have germinated in from a month to six weeks from the time of sowing; a sharp look-out must be kept for woodlice, which devour the seedlings unless they are trapped. The boxes should then be raised as near the glass as possible, and have sufficient water to keep the soil pleasantly moist and be lightly syringed on fine bright days; air must be given on all favourable occasions to keep them as sturdy as possible. Soft water should always be used for syringing, as water containing lime spoils the foliage.

The little plants should remain in the boxes in which the seeds were sown until about the middle of February. Then commence by preparing a suitable number of boxes $4\frac{1}{2}$ inches deep by thoroughly draining them and filling with a compost of equal parts of rough leaf soil and good fresh turfy loam; to make sure of there being no grubs or wireworms present I roast the soil on large tins. I then add some old mortar rubble and sand, thoroughly mixing and slightly moistening if necessary. The boxes are placed in the same temperature as the plants to become warm, and on the following day the plants (which by this time have from three to five leaves) are carefully lifted with a pointed stick and transplanted twenty-four in a box of the size previously mentioned; with one good watering to settle the soil, frequent applications will not afterwards be required. The syringe must be used daily, and the boxes still be kept in the heated pit.

In about eight or ten weeks from the time they were transplanted they will have almost covered the soil with leaves, and preparations should be made for placing them in the flowering pots. A similar compost as before may be used, and sufficient new or clean 5-inch and 6-inch pots should be drained, each having a handful of old mortar over the crocks. See that the mould in the boxes is moist throughout, as the plants will then lift with balls of soil attached to the roots; the larger may go into 6-inch and the remainder 5-inch pots. The soil should be pressed moderately firmly in the pots, working it round the sides with a thin rammer and leaving the top of the corm just above the surface of the soil. Return the plants to the same pit as before, where they should remain until established in the pots, and be watered and syringed as before. In two or three weeks they ought to be removed to an unheated pit or frame, and kept rather close for a time to inure them to cool frame treatment. This is usually done early in June, and for a week or two the pots may stand closely together, but by midsummer they should be plunged in ashes to the rim a good distance apart, and within 6 inches of the glass.

The plants will require watering carefully at this stage until, in fact, the pots become filled with roots, when abundant supplies are necessary, also syringing each morning, and again about three o'clock on bright warm days. Shading must also be carefully attended to, but should not be overdone, as they will be found to stand more sun than is usually allowed them. I generally put on the tiffany, or similar material, about 10.30 or 11 A.M., and remove it again about 3 P.M., or before if dull; much depends on the weather, as on some days no shade whatever is required. The plants must have ample ventilation by night as well as by day. I use small blocks about 2 inches thick for the front of frames, one under each side of the lights, and a single 6 or 8-inch block at the back; this tends to keep the plants sturdy, and during August and early part of September the lights may be withdrawn at night, as the plants seem to enjoy the dews which are then prevalent. Weak liquid manure should be given at each watering, as soon as the pots are full of roots.

Towards the end of September many plants will be coming into flower, and all will be full of buds, and ought to be removed to the greenhouse or conservatory, where they will flower all through the winter. I find it a good plan to arrange them in blocks of two or three dozen plants of separate colours—viz., whites, crimsons, rose, and other shades; this gives them a telling and distinct appearance. By the above system I find Cyclamens much easier to grow than Pelargoniums, and they are splendid for cut flowers. I omitted to mention that if green fly should put in an appearance in the early stages whilst in the heated pit I vapourise them with nicotine compound, and when in the cold frames, being somewhat difficult to vaporise, I have found syringing or spraying with quassia extract or XL-All liquid insecticide excellent.—J. JUSTICE, *The Nash, Kempsey, Worcester.*

[The specimens sent by Mr. Justice included both flowers and foliage, which were equal in colour, substance, and form to any we have seen.]

Mentmore: The Seat of the Earl of Rosebery.



IN the records of contemporary horticulture there are certain numbers of estates in various parts of the country which are recognised as conspicuous examples of general excellence. Their celebrity does not hinge on one particular feature, as their owners and managers do not seek for popularity with one section, preferring to shine in the broadest domain of the real world of horticulture. Neither do they take up the cultivation of Chrysanthemums, or Roses, or Apples, or Potatoes, and, concentrating the whole of the available forces on one of these,

can find no evidence of modernity in the magnificent trees that abound, and which in the splendid growth they have made speak volumes in praise of the fertility of the soil and the skilfulness of the attention that has been bestowed upon them. They have in attaining a rapid maturity added age and dignity to the estate of Mentmore until it has come to be recognised as a home of arboriculture and of horticulture in its broadest sense.

From the Railway.

Holding as it does amongst horticulturists such an enviable reputation, it seems scarcely necessary to state that the demesne lies to

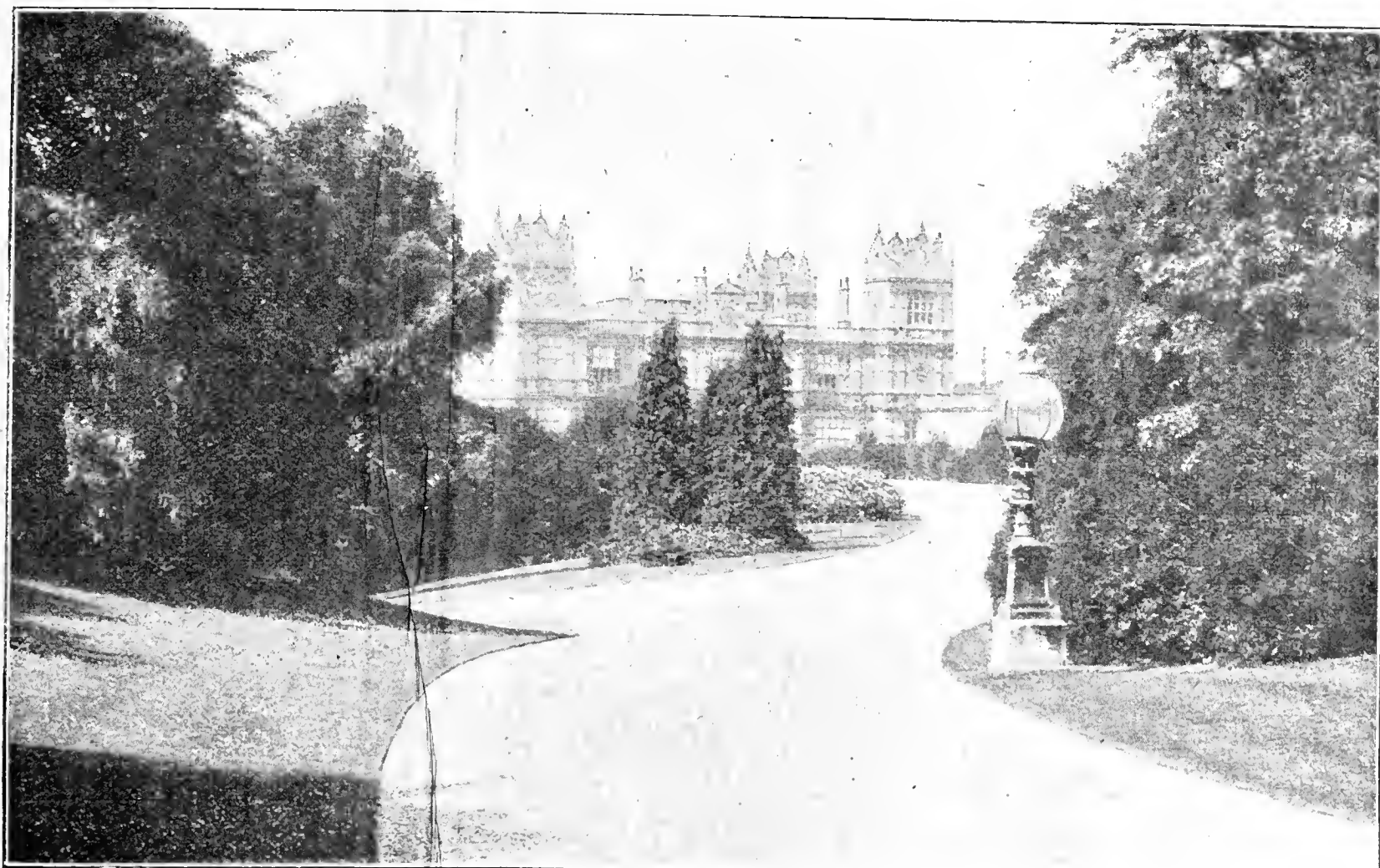


Photo by Theo Piggott,

Leighton Buzzard.

FIG. 57.—MENTMORE: THE MAIN DRIVE.

produce specimens of unparalleled excellence as they might easily were they so minded. Instead of this all these products are grown, and more, with such striking success that every crop becomes so to speak a specialty, and the gardener a specialist in all departments of gardening. Such estates are becoming fewer and fewer in numbers as the result of circumstances that would be readily explainable in the proper place, which is not the pages of the *Journal of Horticulture*.

Hence it is that those now remaining as illustrative of the many existing, shall we say a generation ago, deserve more than ordinary notice, and as Mentmore must be included amongst them, it is now proposed to give it, by the aid of the camera and letterpress, attention commensurate with its importance. Mentmore could not, as all the world knows, be brought within the category of old estates, as it owes, in the main, its origin and growth to the past half century. That there existed a manor and grounds of Mentmore prior to the date given must be admitted, but we are now regarding it from a purely horticultural point of view, and as such it must be designated new. But one

the left of the town of Leighton Buzzard, and slightly over two miles from Cheddington station, on the London and North-Western Railway. It is probably a fact, however, that hundreds of persons interested in gardening, and thousands of the general public, are not aware that an admirable view of the range of fruit houses at the top of the vegetable garden can be had from the train as it passes Cheddington station on its northward journey. Many times has this garden been remarked upon by travellers who have speculated as to the ownership of the estate. The distance from London is about thirty-eight miles, and readers of these notes who have not yet enjoyed the peep may do so on the next occasion that they make a pilgrimage on the railway specified. From a purely horticultural aspect there is little to interest the traveller on either side of the line, so that it may at once be assumed that we have detrained at Cheddington Junction, and are rapidly advancing towards the entrance to Mentmore. We have, however, a considerable drive ere the splendid gardens, the diversified pleasure grounds, and the mansion are reached.

Amidst the Damsons.

Scarcely five minutes will have passed after leaving the station before there will appear on either hand evidence of one of the industries of the surrounding country—Damson growing. Of these fruits there are scores of acres in the neighbourhood, and as a Damson producer it must rank with the Pershore district of Worcestershire and one or two



Photo by Theo Pigott,

Leighton Buzzard.

FIG. 58.—MENTMORE: IN THE SUBTROPICAL GARDEN.

others. Writing of the industry in the Journal some half-dozen years ago, an authoritative writer said, "That they (Damsons) pay remarkably well scarcely needs telling, as it is very certain such shrewd business men as Lord Rosebery and his experienced gardener (Mr. Smith) would not go on establishing orchards of them for the benefit of the estate and those who rent the farms if Damsons were 'played out.' But for the Damson orchards it is very probable many of the farmers would have been bankrupt ere this. Thirty acres of trees cost very little to keep in good order, and they rarely fail to produce heavy crops. It must be borne in mind that the soil, a mixture of chalk and clay, suits the trees admirably, this promoting that exceptionally robust productive habit so essential to success. Quite young trees bear well, while the older ones seem, when the fruit is ripe, to be a mass of purple. In addition to the orchards formed and handed over or let to the tenants, Lord Rosebery has about a hundred acres of Damsons on his own hands, Mr. Smith having sole charge." The writer gives many other interesting details, and concludes with the following remarks, that are as pertinent now as at the moment when they were written, and which point a moral in packing that might well be taken to heart by many fruit growers. "The Mentmore Damsons always sell well, no matter how heavy may be the crops, owing to the reputation gained for honest packing. There is no forming a top layer with picked fruit while that underneath is much mixed, and it pays better to throw or give inferior fruit away than to mix it with better samples."

From the Station.

A few yards beyond the orchards, with an intervening single line of railway, and the drive to Mentmore Gardens is entered upon in real earnest. On the day of my visit the face of Nature was clothed in all the purity of a snowy mantle, and from the trees the hoar frost hung in festoons, and decked each minute twig in chaste winter finery. There were something over 20° of frost, and the keen air acted as an invigorating tonic after the enervating influences of London in winter. This approach is flanked by circular groups of trees and Conifers, each,

apparently, some 50 or 60 yards in diameter, and the same distance apart, and still farther from the road. In the spaces between the groups are specimen Wellingtonias, which have ample room to show their development. There is no cramping; on the contrary, a bold aspect has been insured by this system of planting. The trees show admirably on the grass, which is kept short, but is never cropped closely with a lawn mower. The ground here is nearly level, the soil being clay with an admixture of chalk, and of whose fertility the trees speak plainly. The drive continues thus for a considerable distance, and then rises to the village of Mentmore, with the mansion, flower gardens, and park on the one hand, and the vegetable and fruit gardens on the other. Of the village and its features something more will be said later; in the meantime, however, a little history will not be out of place, especially as it has considerable bearing on what has been said in the opening paragraphs.

History: The Mansion.

Mentmore, as above indicated, is a comparatively new place, the mansion having been commenced in 1851, and completed in a few years by the late Baron Meyer de Rothschild. It is interesting to observe that the designs for this splendid building were supplied by Sir Joseph Paxton, M.P., and his son-in-law, Mr. George Henry Stokes, architect. The style adopted, by desire of the Baron, for the exterior has been described as that which prevailed during the early part of the reign of King James I. The combination and arrangement have contributed to produce grouping of a picturesque character and outline, and the details and ornamentation are

understood to be the result of a careful study and examination of the works of John of Padua. The mansion is built entirely of Ancaster stone, of fine quality and colour; the cornices are highly enriched, and the frieze of each order is filled in with carved panels and heads. The arrangements and decorations of the interior are on a similar scale of grandeur, and altogether this is one of the most magnificent houses of the great that adorn our land—at once an embodiment of wealth and stability, and typical of the character of the "sea-girt isle." In the three photographic illustrations, numbered respectively 57, 59, and 61, are given different aspects of the mansion, and these will largely assist in conveying to the mind of the reader an idea of its ornate splendour.

History: The Gardens.

The gardens have been formed and the grounds planted by degrees, something being added and something done every year until in the aggregate the work accomplished is of great magnitude. At first the Baron would have 10 gardens, but Covent Garden should furnish him with the requisite flowers, fruits, and vegetables. Then he would grow a little fruit, and orchards were planted, which now extend to scores of acres. He did not like glass structures, but eventually one house might be built. A strip might be had for growing a few vegetables, and boarded fences for training trees. Now there are nearly 20 acres enclosed with walls, and one of the finest collections of fruit trees in the kingdom. This has Mentmore grown, and the pleasure grounds have increased in a similar manner, Mr. Smith, with a large staff, adding and improving every year, carrying out his own designs after approval by his employers, and completing whatever work he has in hand in the best manner. He evidently works on the principle, and a most excellent one it is, that is embodied in the aphorism, "First see your way, then go ahead." A headlong rush into alterations without due consideration frequently necessitates work having to be done again, while he who commences an undertaking without a clear perception of the ultimate result, practically labours in the dark. Neither of these mistakes, both of which are somewhat too common, is made at Mentmore.

The Main Drive.

The drive leading to the principal entrance, and which is shown in the illustration (fig. 57), is of noble proportions, and is worthy the most splendid conceptions of its great designer. The curving sweep upwards towards the point shown in the left foreground of the picture is of magnificent scope, and is far superior to the majority of those seen in different places. Standing close to this point is a bronze figure, of a favourite horse of the late Baron de Rothschild, which was designed and executed by the great sculptor Boehm. This monument rises, as it were, from a groundwork of Pampas Grass, whose waving plumes must produce a charming effect on a pleasant day. This model forms a really striking feature from several points in the surrounding pleasure gardens. On the right of the drive as one approaches the mansion, and not shown in the photograph reproduced, there is a flank of various trees of different habits, amidst which stand conspicuously, like sentinels, upright Junipers and Cypresses. Many splendid trees are to be observed at intervals hereabouts, but some of them are largely obscured by their strong growing and less attractive neighbours. Thinning has been done, and will have to be still further practised, but Lord Rosebery has an aversion to the felling of trees and their removal, so that Mr. Smith has to proceed with judicious caution. A narrow path branching from this drive leads the visitor to the "cottage in the wood," wherein the Baron and Baroness de Rothschild lived during the time that the mansion was being erected. It is a charmingly secluded spot, embowered in trees, where no sound could come save the song of birds and the sighing of the wind through the trees.

The Laurel Banks.

Though the appearance of our illustrations does not perhaps suggest the fact, the mansion of Mentmore stands on a somewhat lofty rise, whose sides fall away sharply on at least two sides of the house and gradually elsewhere. In one position there is a slope of grass, but the great features are the Laurel banks that cover an immense area of ground and which must contain hundreds of thousands of individual plants. I have seen something similar before, but never on such a gigantic scale as this. All the surfaces are kept quite smooth, and the labour of cutting them over must be very considerable. In some places they are quite level, while in others they fall at a sharp angle, but everywhere there is the same regularity. These form cover for rabbits innumerable, and a few were caught sight of scurrying across the path as we made our journey round; the whirr of the pheasant's wing as the birds rose in flight for the parkland was frequently audible, both telling of lively sport in their proper time and season. The incline from the lower grounds to the terraces and mansion between the Laurels is very steep, and our advance was not particularly rapid, as will be understood when the slippery state of the grounds from frost and snow is borne in mind.

The View from the Terrace.

There was a time when the ground immediately at the foot of the slope beneath this terrace was devoted to parkland, but some score or so of years ago a portion was enclosed for the extension of the pleasure grounds. Under the fostering care of Mr. Smith this area has been developed until at the present time it is a charming adjunct to the gardens that were previously not of commensurate extent with the mansion and estate. However it is not to these that reference would be particularly made just now, but rather to the magnificent pastoral panorama that is spread before the

eyes. One might aptly quote the words of the famous Roderick Dhu to FitzJames when he said—

... where lay,
Extended in succession gay,
Deep waving fields and pastures green,
With gentle slopes and groves between.

We must, however, to appreciate the whole scene go beyond the valleys and, allowing the eye to follow the rising of the ground, find the view terminate in the Chiltern Hills. This noble range forms a fitting background to a piece of typical scenery, than which none need seek a fairer in all the broad acres of England. On these hills is situated, as is comparatively well known, Halton, the residence of Mr. Alfred de Rothschild, and on a clear day a glimpse of the estate can be had from Mentmore. The intervening space is beautifully wooded, as all real English scenery should be, and one's eyes may roam for miles without meeting any incongruous object, or any semblance of a thing to mar the harmony of the whole.

The Fountains Garden.

On this terrace too, and also bounded in the distance by the Chiltern Hills, is an enclosed formal garden that takes its title from the fountains it contains. It is entered by a broad flight of stone steps, and the illustration (fig. 59) will convey a sufficiently clear conception of its extent and formation. The month of February cannot possibly be regarded as an ideal time to see such a feature as this. There it is true are the bold beds, but they are destitute of those plants that contribute towards making them so beautiful at a pleasanter and more genial period of the year. It then, one can readily conceive, forms a most desirable feature that is likely to elicit admiration from every visitor to Mentmore. Already preparations are being made for its adornment during the coming summer, and in their winter quarters may be found thousands of plants whose destination will be the Fountains Garden when the proper time for their insertion is with us again. Naturally the design is formal, but no one need cavil at this,

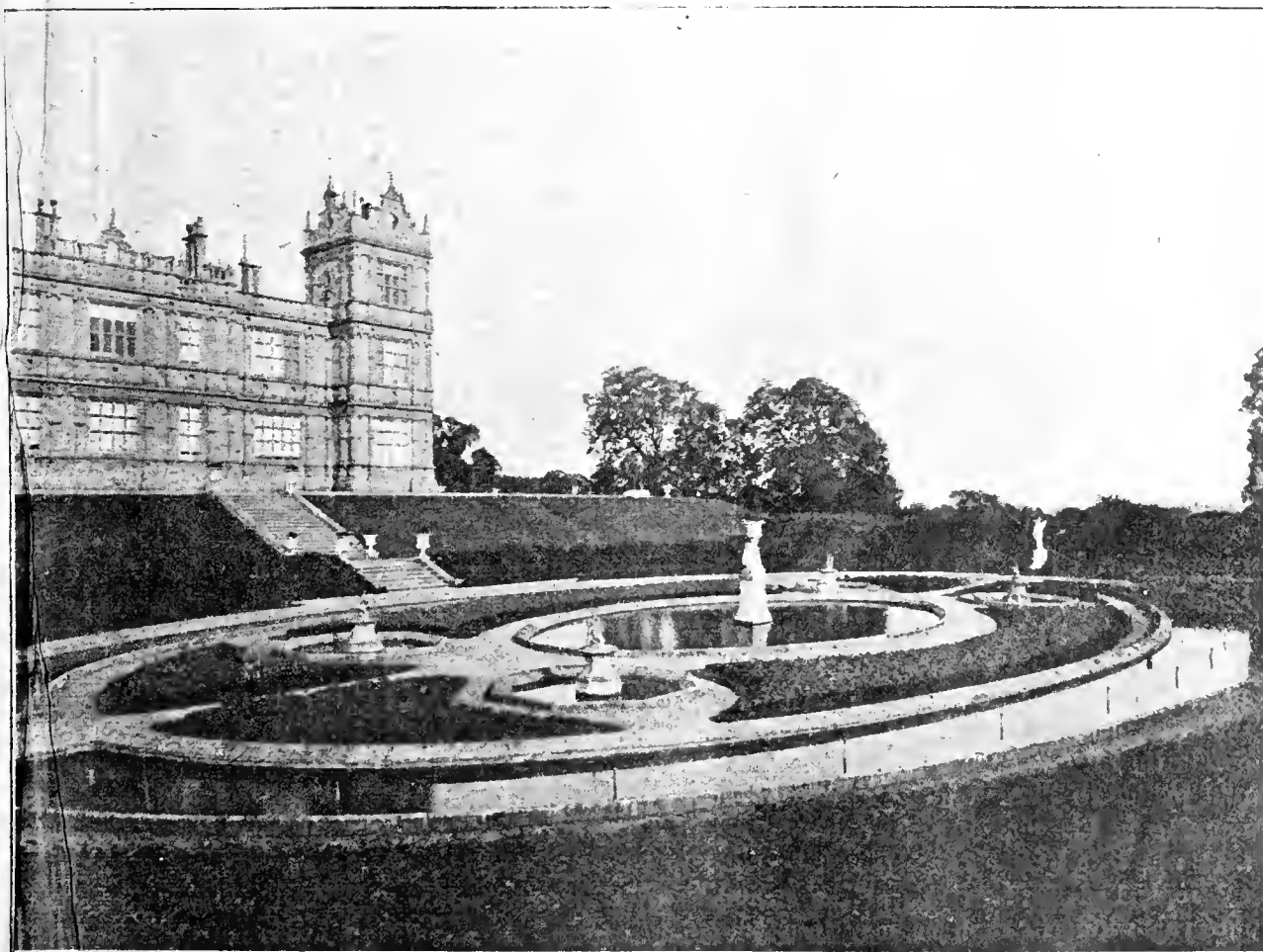


Photo by Theo Piggoit.

Lettyton Durrant.

FIG. 59.—MENTMORE: THE FOUNTAINS GARDEN.

for when the eye tires of the formality there is always the view beyond to afford change and repose and add zest to the beauties of the garden that have not yet been seen.

The Italian Garden.

Of far greater extent than the foregoing, and probably even more beautiful in the summer time, is the adjacent Italian garden, whose bronzes, statues, and vases are now encased in wooden shields that have

little of the beautiful but much of the useful in their construction. An admirable view of this garden with the mansion in the background is afforded by the illustration (fig. 61). It will be at once observed that as in the case of the previously mentioned Fontains Garden, this is sunk, and entrance is made by broad stone steps. The design adopted in the laying out of beds is decidedly elaborate, and as the beds are of considerable extent, the number of plants required to efficiently stock them is enormous. Though termed the Italian garden, doubtless from its shape and the inclusion of statuary, it has in the Box edgings to the beds and scrolls something of the Dutch character. These are several inches high and wide, and have an old world look beside the known age of the mansion. One can with difficulty picture in the mind the charm of this garden, and I for one shall live in the hope that I may see it and its neighbourhood at the zenith of their beauty at some future time. But we must press on, as there is still much remaining to which reference must be made, and even then justice will scarcely be done to the varied glories of Mentmore.

The Subtropical Garden.

The pleasure grounds or gardens of Mentmore are literally crowded with features of interest and beauty, and amongst them must be classed the subtropical garden. This, as is the case with the flower gardens, is essentially a feature of the summer, but for the winter one might well change the name to pinetum, as it is rich in shapely handsome trees of many choice kinds. As an addition to the pleasure grounds in the summer the subtropical section ought never to be omitted, as from its position and the type of plants one should use therein, it affords a cool retreat that is entirely different in its essential characteristics from every other part of the garden. No portion will, as a rule, be more appreciated or more admired, but it is, of course, necessary to adhere rigidly in stocking it to plants that will assist in maintaining the name as correct. In the shady nooks between stately Conifers may be found ideal spots for a handsome Palm or a noble Dracena, while for the beds cut out of the soft green turf we have the Cannas, the Ricinus, the Wigandias, and many others that will suggest themselves to the practised mind. The illustration (fig. 58) depicts a single curve in the subtropical garden at Mentmore, and though one may readily gather that it is a place of beauty and interest, the picture fails to do real justice to its undoubted charms. Even on that cold and frosty morning in February it was singularly beautiful, though its attractiveness was lent by the frost-laden trees, and not the pure and simple subtropical plants. At one of the entrances to this garden, and at intervals within its confines, may be seen numbers of Bamboos, which thrive remarkably. Considering the truly perpetual handsomeness of well grown specimens, it is to me a matter for constant surprise that Bamboos are not employed far more extensively than is the case at present. They are, however, growing steadily in favour, and will eventually be seen with pleasing frequency.

The Rose Gardens.

Though the enthusiastic rosarian growing for exhibition produces blooms of surpassing magnificence, there is no place in which Roses are grown where they appear more at home, and receive more general admiration, than in the Rose garden. This, of course, is provided the enclosed has been judiciously chosen and skilfully planted. It must

have a situation that, while it is to a degree protected, has unobstructed light, and where the probability of the greedy roots of forest or other trees penetrating the garden and robbing the legitimate occupants of nourishment is reduced to a minimum. There must further have been the presence of a master hand or mind in its formation, as an over-intricate design, or even too much rustic work, might easily rob the whole of beauty. I have in mind a Rose garden admirably chosen as to site, and skilfully laid out, that is spoiled by the over-prodigious use of young Pines to form rustic arches for the climbing Roses. True this particular garden is yet in its infancy, and the softening hand of time will do much to tone down the naked obtrusiveness of those pillars and arches.

Needless to say, in forming the garden at Mentmore everything that care, skill and deep knowledge could do to insure success was done, and with the happiest results. This is another feature that must be seen in the summer to appreciate its worth. But one Rose garden is

apparently insufficient to meet all the requirements of the estate, and consequently a second is in course of formation at the present time. This is being especially prepared for the accommodation of 4000 French Roses, and the garden to be in keeping with the varieties in it will be laid out in the French style. An excellent position has been selected with a very gentle slope, and after the work of levelling is completed the beds will be formed with interspaces of grass. At the foot of the garden a belt of shrubs is being planted, and down each side there will be a broad border for herbaceous plants. The whole will be finished this spring, and in a season or two will have to be reckoned amongst the many varied charms of the estate. As has been the case with the almost numberless other improvements, the planning and arrangement of this have emanated from the mind of Mr. Smith, and are being adopted with the entire approbation of his noble employer. The formal design in this garden will be in direct contrast to the freer English style.

The Aviary and Hardy Fernery.

In immediate contiguity to both these gardens are a large aviary and a hardy fernery. We had a brief glance into the former, and saw many birds of strange form, and in some cases brilliant plumage. They have a commodious, and, apparently, congenial dwelling place amidst the trees, and no doubt many visitors wend their way to this spot to see these denizens of other lands that have become acclimatised to our own fair country. In the hardy fernery there was nothing to be seen save the snow, with here and there a brown frond lying ragged and exposed. It is thus not possible to give any particulars of its formation from my own experience, but it will not be out of place to reprint a brief description that was furnished to the *Journal of Horticulture* many years ago. The writer there says:—"Proceeding we pass a hardy fernery pleasingly formed in a nook in the woods, the very place in which Ferns delight. It is surprising what can be done with a few loads of soil and stones thrown up under trees in a series of irregular mounds with curving paths between, when taste and good judgment are exercised in the arrangement. Here the Ferns have been planted in groups of species and varieties, not the whole regularly dotted and mixed in a weak diluted manner that should never be seen in ferneries of this nature."



Photo by Theo Figgott,

Leighn Buzzard.

FIG. 60.—MENTMORE: OLD MANOR.

A Tree with a History.

On an estate of such acreage as Mentmore it is usually safe to assume that there will be several kinds of soil, and it frequently happens that trees which will thrive in one position barely exist in another. To a degree this is the case here, but, generally speaking, all kinds of trees grow remarkably well, and if they do not make rapid advance at first they easily make up for it later when the roots have become thoroughly established. Then they grow speedily and strongly and attain to considerable stature in the course of a few years. Evidence of this can be seen on every hand, and hundreds of specimens that Mr. Smith planted are now handsome, tall and strong. It is

sown, and two years later (March 25th, 1880) the plantlet was placed in its present home. To-day it has a height of considerably over 30 feet. The Countess of Rosebery has long since passed to her eternal rest, but her memory remains to-day as green in the minds of men and women as the stately tree that was planted on her bridal day.

The Village of Mentmore.

Proceeding from the essentially ornamental and beautiful portion of the estate to the still beautiful but more utilitarian section, we pass through the village of Mentmore. It is ideally situated with splendid views on every hand, and one has not traversed a dozen yards ere incontrovertible evidence is seen of the presence of a thoughtful owner.

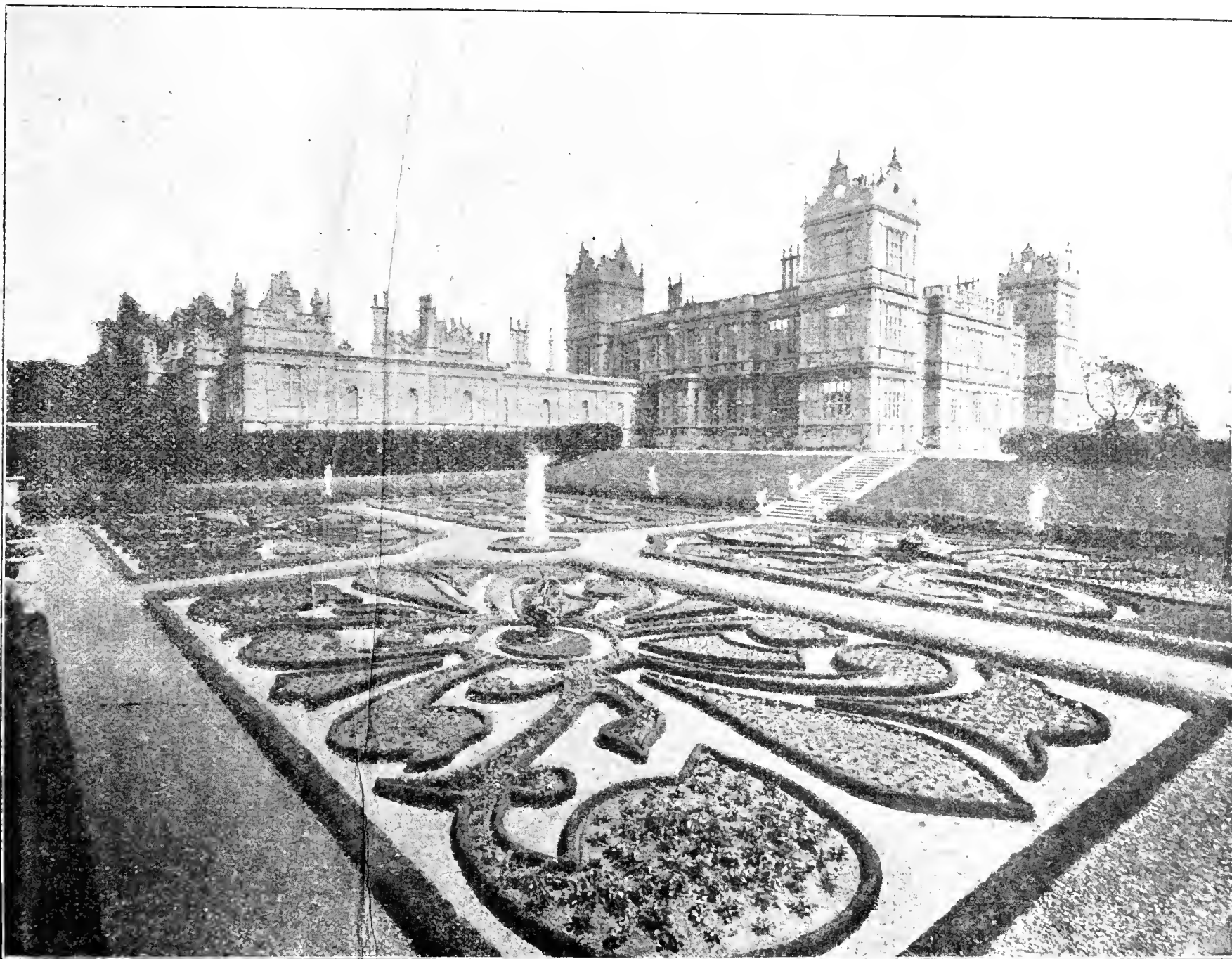


Photo by Theo Piggott,

Leighton Buzzard.

FIG. 61.—MENTMORE: THE ITALIAN GARDEN.

not desirable in such notes as these to give lists of plants or flowers or trees, and I shall therefore take one species as being typical of many others. For this purpose we may choose *Wellingtonia gigantea*, which is seen in many positions and everywhere in splendid condition. Two specimens measured by Mr. Smith have a height of 37 and 35 feet respectively, with a spread of branches of 50 feet. We may, however, make for the moment the selection still narrower, bringing it down to one example of the species, as this tree has indeed a history. It stands with a few others in a plantation close to Mr. Smith's house, and has been grown from seeds sown by him many years ago. The cone containing the seeds from which this plant was raised was shot with a rifle from a tree in California by a medical friend of the late Baron de Rothschild, and reached Mr. Smith two weeks prior to the Earl of Rosebery's marriage to the daughter of the house. On the day of the wedding, March 20th, 1878, the seeds were

The clean and tidy houses have an air of comfort that is unfortunately lacking in many an English village, and the gardens attached, though not now containing much produce, will doubtless in due season be made to bring forth their share of food for the homes. The schoolhouses have, too, an aspect of prosperity that is quite in keeping with the surroundings. The allotments provided for cottagers I did not see, but the system of working and their extent are, I know, much above the average, and many surprisingly excellent crops are gathered therefrom. From either end of the comparatively short village street there are magnificent views of fertile valley to rising ground beyond, while to the right passes the road to the town of Leighton. From several points hereabouts glimpses can be had of Mr. Leopold de Rothschild's garden of Ascott, but the residence cannot be seen because of the trees by which it is surrounded. These, too, naturally obscure any details of a garden that has a wide repute for its beauty.

The Fruit Gardens.

At a point where the Leighton road makes a sweeping curve we find a pair of gates that gives upon the gardens devoted to fruit and vegetables. The former are of great extent, and it is superfluous to say space is found for all kinds of hardy fruits. The number of Apple trees is enormous, and all the best varieties in cultivation are represented. The bush trees were of particular excellence, and were models of the best type. Each growth was literally studded with fruit buds, and every branch had sufficient space for its growths to receive the utmost benefits derivable from sun and air. A variety of superlative merit was found in long rows extending right across the broad quarters, while others of lesser value had more limited attention accorded to them. Practically the same system is adopted with all other kinds of fruits, and all alike look peculiarly thrifty. Bush fruits, as including Gooseberries, Currants, and Raspberries, with the all-important Strawberries, receive attention commensurate with their importance. The spaces between the fruit trees are not at Mentmore, as is often the case elsewhere, cropped with vegetables, but are requisitioned for the accommodation of Daffodils, of which there must be hundreds of thousands of bulbs.

The Vegetable Garden.

In an establishment of the magnitude of Mentmore the vegetable department is an exceptionally important one, for not only have the supplies to be constant, but also large. A small quarter of a popular product, like Celery for example, would be practically useless, and consequently a large breadth of ground has of necessity to be devoted to it. And indeed this is practically the case with all the vegetables grown. It need not, therefore, be said that the vegetable gardens are extensive, and are managed under such an excellent system that the possibility of a failure in the supplies has been reduced to a minimum. It cannot be stated that when this visit was paid the whole of the ground was stocked, as such could scarcely be the case. There were nevertheless several valuable crops, and active preparations were being made for the complete cropping of the land immediately the proper time for doing so is with us. The photographic reproduction (fig. 62) does not do the garden justice, but it shows the range of glass (which has been previously noted as visible from the railway), with the village of Mentmore beyond. Of course the walls surrounding this garden are fully occupied by fruit trees trained in various forms, and these, like the bush specimens, are given the most skilful attention. This department may be a little neglected on some estates, but such is not the case at Mentmore.

Fruits under Glass.

With the exception of the dome-roofed structure in the centre of the range the several houses seen in the illustration are devoted to Vines, Peaches, and Nectarines, and it would be no easy matter to find a better type of house for the important crops named. They have sufficient height without being unreasonably difficult to manage; they are three-quarter span-roofed, and afford the occupants an abundance of unobstructed light, while ample provision is made for ventilation and for heating. The Vines vary in condition at present, some being well started, others with the rods depressed, more still dormant, with some in one house carrying fruits which will, doubtless before the moment of writing, have been removed. Mr. Smith thinks very highly of the comparatively new Appley Towers for late use. The Peaches and Nectarines present about the same appearance as the Vines, but in this case there was naturally no crop of ripe fruit, though there was an abundance of flowers. The whole of the stock was in splendid condition, as were the structures themselves, everything being scrupulously clean. The earliest Vines are in pots in a small but lofty house of a much more old-fashioned type. Here the healthy young canes were in vigorous growth, and carrying their full share of bunches, the earliest of which showed that the thinner had been at work. A long, low, pit-like range provides accommodation for Pines, and handsome the plants looked in their sturdy health. It is fortunate that those luscious fruits still find a place in some gardens, when they have been ousted from such large numbers. All other fruits receive attention proportionate with their importance, this being, of course, governed by their acceptability at the mansion.

The Plant Houses.

The major portion of the glass houses are placed in one small garden by themselves, where are also situated numbers of valuable frames. Amongst the several structures space is found for growing all sorts of flowering and foliage plants, both for affording cut flowers and

for providing material for the embellishment of the mansions at Mentmore and in London. Plants are mainly grown in large collections, the greatest amount of space being accorded to the most favoured, with reductions according to recognised importance. The greater proportion of these houses are long span-roofed, and rather low, and are admirably adapted to the purpose for which they were designed. There are in addition several houses of much greater dimensions for various plants, for which the other structures are not suited. One of these, for example, is very lofty, as it must be, for the tall Palms used in the mansions require considerably more head room than the lower houses could possibly provide. This department like all the others is splendidly equipped, but it may be safely asserted that its capacities are sometimes strained to the utmost to fulfil the demands made upon it.

The Bothy and Garden Rooms.

From the young gardeners' point of view the bothy is one of the most important adjuncts to a garden, and considering the hours that journeymen have to spend therein, one cannot be surprised that this is so. Many of the buildings employed for the housing of the young men are a positive disgrace, and if the new erection at Mentmore were taken as a standard model for adoption in all gardens we should hear no more complaints on the part of young gardeners of improper accommodation. It is a commodious two-storied structure of red bricks and tiles, and the rooms are light and of splendid size. There are excellent kitchens, washhouses, and pantries, while a bath was also to be fitted in a spare upstairs room. It is certainly one of the most complete bothies that we have had the pleasure of inspecting. The other rooms, sheds, and houses attached to the gardens are very numerous, and comprise special places for fruit and flower packing, Grape rooms, and hardy fruit rooms, Mushroom houses, tool and potting sheds, and so on through the whole list of such conveniences.

The Man in Charge.

For slightly over a quarter of a century these important gardens have been in the charge of Mr. Jas. Smith, and during the whole of that period improvements have been in progress or contemplation. Everything that care and skill could do has been done, so that the money at disposal should be wisely spent and not be frittered away on alterations that could bring no ultimate benefit to the estate. Mr. Smith is known and respected throughout the entire world of gardening, and besides being an active member of the Fruit Committee of the Royal Horticultural Society, is one of the original sixty Victoria medallists of honour. Mr. Smith lives in the old manor house of Mentmore (fig. 60), in which he presides as a quiet, yet genial host, and wherein both he and Mrs. Smith offered much appreciated hospitality on the occasion of this journey to see Mentmore and its beauties.—ZINGARI.

The Freemasonry of Gardening.

IN that fellow feeling which makes the whole gardening world kin, there are not only many pleasing traits, but more helps to workers and their work than the outside world is aware of or even imagines. True it is that the links which form this great chain of brotherhood are invisible to the public eye; yet, nevertheless, do they make a stronger girdle, probably, than more conspicuous ties in any other phases of life ever do, for they are forged by the great hand of Nature herself, as a common bond to those who are in constant communion with her. "You gardeners are too clannish," a gentleman once remarked, "you always appear to isolate yourselves from other men in other stations of life." That is so. Few will dispute it, though many cannot understand it. Nature is a jealous ruler, and one of her unwritten commandments is, Thou shalt have none other mistresses but me; hence, outside their own sphere of work gardeners find little to attract them, and against that there is a strongly felt, if unseen, magnetic influence confining them to their own orbit of duty. Rarely indeed does a single unit fly off at a tangent for absorption by other spheres of labour or recreation; and the gravity of a gardener's life remains practically undisturbed by the most exciting of outside influences. Glorious "clannishness!" Splendid "isolation!" Be it our endeavour here to analyse, to encourage and promote its growth until what is to some more or less visionary may be to all a forcible, living reality.

To be simply a gardener carries with it the presumptive rights and

ostensible privileges of *entree* to the gardens of the United Kingdom; probably far beyond, over that Empire on which the sun never sets, and we trust never will. A few exceptions, possibly, there are; if so, they are few and far between, for the writer has never knocked at a garden door that was not opened unto him, and he was welcomed inside. Invidious as it may appear, an employer is often precluded by some social barriers or strangership from entering a garden whose door stands open to his man unless he, too, should belong to the great order of gardeners (in the broader sense); then, as such, all barriers disappear. As gardeners, in the more comprehensive sense of the term, the peer and the pound a week man may for the nonce join hands, and, as a matter of fact, such has actually occurred on one occasion at least. Many old heads, of course, well understand these matters, which are more often thought about than talked about. It is for the benefit of younger and less experienced men they are now given expression to, which, *apropos* of visiting, will in due course include some unwritten rules of *etiquette* it is unwise to ignore. It may be said of some liberal-minded patrons of gardening that not only do

the herbaceous border. Hopes his visit is not inconvenient; a truce to all covenances and conveniences—is he not a “gentleman,” a gardener, and a brother? Aye, and always will be, whether we rise or fall in the gardening world.

Of such is the genuine gardener; but there is another class of visitors, gentlemen, too, needing but not always accorded equal rights and privileges in the gardener’s freemasonry, for in spite of its elasticity under the genial warmth of friendship’s glow, it quickly contracts in the colder atmosphere of commercial elements. Judiciously combined, however, it is often a mixture of pleasure and profit. Some commercial travellers take this compound interest in the gardener and all his works. They are, generally, old hands with long heads, literally interpreting the adage, “no profit is where is no pleasure ta’en.” Younger men “on the road” might do worse than follow in their footsteps. This gentleman, whether his approach is heralded by her Majesty’s mail or not, who invariably comes laden with a neat valise or portfolio and a good fund of commercial logic, often finds that the gardener’s heart does not go out to meet him. No matter how

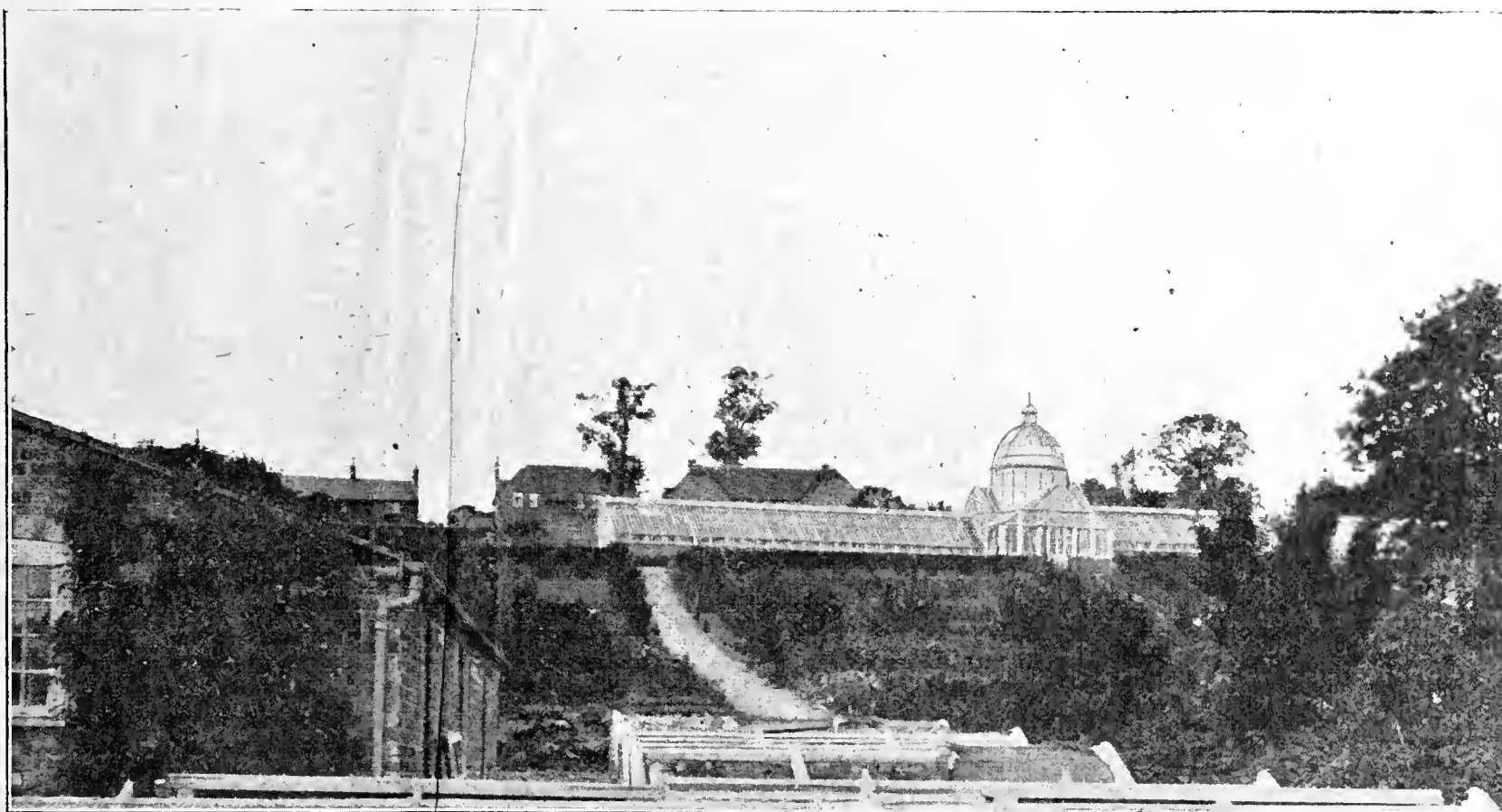


Photo by Theo Piggott.

Leighton Buzzard.

FIG. 62.—MENTMORE: THE VEGETABLE GARDENS AND FRUIT RANGE.

they love their gardens but love gardeners too, according to them the warmest of welcome on their visits. Still, there is a good deal of surreptitious visiting, for the British gardener is often a modest, diffident man; one who, while anxious to see, would rather not be seen, and the better the man the more anxious does he appear to creep under a bushel of reserve.

With worker and fellow worker all reserve is cast to the winds, and the gardener stands out in his best light, anxious to learn and ready to teach. There are no special signs or grips, although a gardener’s grip is intensely characteristic in the freemasonry of the craft, and the only passport required is to be a gardener. Never let any man of any other trade, profession, or vocation pose for what he is not, in order to gain admittance to the Eden of his imagination. He will be detected at a glance, for the recognition is intuitive. Let the veriest stranger stand within one’s garden gates, and ere a word is spoken he is weighed in the balance of mental observation, and received accordingly. “A gentleman to see you; he is waiting on the far walk.” A gardener we suppose (all gardeners are gentlemen, or should be). We are *en deshabille*—viz., *en* shirtsleeves, and they rolled well up, consequently to the ordinary visitor, of whatever degree, “not at home.” Naked, but not ashamed at being thus caught by one of the craft. “On the far walk? All right, be there in a minute.” That minute’s grace is sufficient to test the standing of our visitor, for he is already fidgetting on “the far walk,” and critically poking his eye through

peaceful his appearance and tactics you feel that he is on the warpath, and, unless invested with the power and will to give an order, the feeling is an uncomfortable one. Well do we remember how, many years ago, two capable men, representing two of our largest trade concerns, arrived much to their chagrin by the same train, and how by a little diplomacy we switched one on to the other in showing them round, safely despatching them by the next without any canvassing for that order we were not prepared to give. One cannot fail to admire the tact and ability which many business visitors display in extolling their wares, nor fail to feel regret that persuasive eloquence ranging “from grave to gay, from lively to severe” should go unrewarded.—E. K., Dublin.

(To be continued.)

AN AMERICAN INNOVATION.—The Illinois House of Correction is about to try an interesting experiment in the reformation of women criminals. Supt. Sloan has built three large greenhouses, covering a space of 4000 square feet, in which it is intended to grow Roses, Carnations, and Chrysanthemums for the Chicago market. The women prisoners will work in the greenhouses under the direction of an expert horticulturist, and it is expected that contact with the growing plants will have a softening and regenerating effect on the hardened natures of the unhappy inmates of the institution.



A Chat About Work Among Roses.

MARCH is a busy month with the rosarian, who must be up and doing in order to give a good start to his favourite trees, from which he hopes for such fine results during the glorious days of summer. Any planting which has been unavoidably delayed ought to be completed as soon as possible, for although the soil is moist enough now, it is quite possible we may have a dry spring and early summer; such times are always very much against late planted trees of any kind. When late planting is done extra care should be taken to insure good results. After the roots are shortened, if they are in the least dry, immersion in water for a few hours is of great benefit; then with care in planting and mulching with short manure one feels for a time quite satisfied as to results, but should very dry weather occur in May the enthusiast will generally find the means to water, and thus bring to a successful issue the work which was begun so well.

The pruning of Hybrid Perpetuals and other hardy Roses must undoubtedly rank among the most important operations needing attention during March, and when the operator is armed with a keen-edged knife and a stout pair of gloves there are few more pleasant tasks connected with the art of gardening. To secure fine blooms worthy to grace the exhibition table hard pruning must be resorted to. Cut back boldly to within one or two buds of the base of each strong shoot, and remove weak ones entirely. When this system is practised we get abundance of strong shoots each year. In time they become too strong if the plants are not periodically lifted, but then that work is a necessary part of the system for supplying fine blooms. Once in three or four years the bushes ought to be lifted, the ground trenched and thoroughly manured. Hard pruning and plenty of manure may be termed the cardinal points in growing first-rate Roses on dwarfs.

Let us now turn to the consideration of Roses grown in beds purely for garden ornamentation. Some like to see beds filled with good full bushes, laden with numbers of flowers; very hard pruning there is not necessary. For the first year or two the strong shoots sent from the base may be left from 6 to 9 inches in length, weaker ones pruned to two or three eyes. In time less vigorous growth is made, and as the bushes increase in height they may be shortened regularly to two or three eyes, with the exception of very weak shoots, which should be entirely removed. A few worn out branches will each year need cutting away to make room for strong shoots springing from the base, such strong shoots to be left from 9 inches to a foot in length. When treated in this way constant vigour is maintained, and if no disbudding is practised a wealth of beautiful medium-sized flowers is obtained which make the heart glad by their brilliancy and profusion during the sunny days of June.

What a pity it is that the Moss Roses are not more generally grown, for who does not admire them when their pointed buds peep through the crested greenery? Some of the stronger growing varieties succeed admirably if pegged down, the side shoots being pruned closely each year, and a few of the old shoots to be replaced by strong young shoots. In other instances after the foundation of the bush has been laid, it is not wise to prune hard, as the beauty of the flowers does not lie in their size; a profusion of pretty buds is what all wish to secure, and this object is attained by moderate shortening of the shoots.

Arches and pillars of Roses are the glory of many a garden, and although their time of beauty is only a fleeting one, the impression lingers in the memory, even after the summer has passed and the chilly days of autumn come. The climbing Cluster Roses are especially suitable for covering arches and rough buildings, as their growth is so rapid, their management so simple, and their floriferousness so certain. Cover an arch with Crimson Rambler and Climbing White Pet, and then behold at blossoming time truly a thing of beauty. After pruning newly planted stock closely to lay the foundation, the knife need scarcely touch them for a year or two; rapid progress is then made, and the allotted space soon covered; till then only a few unripened shoots need cutting away. But when a dense thicket is formed thinning requires practising each year. I like to examine the trees when the flowers have faded, removing a good deal of the small wood which has flowered, so as to make room for young shoots to be trained in loosely during summer. Some of the very strong shoots I stop, or clip with the shears, to prevent them from "robbing" the weaker ones.

With arches so managed there is not much pruning to be done

now, only a few unripened points to remove, and a little dead wood or useless scrub to be cut away. But either during summer or in spring such attention is necessary, to keep healthy growths covering the whole space. In training avoid anything approaching formality, tie sufficiently to keep the main branches secure to the arches, but let plenty of shoots hang loosely in all directions, then when wreathed with Roses they will be picturesque indeed. Aglaia (Golden Rambler), Euphrosine (Pink Rambler), and Thalia (White Rambler) are other fine varieties in this section. Do not forget to treat these Ramblers liberally, they will repay the trouble. Remove a few inches of the soil, give a coating of rich manure, and cover with soil—fresh loam. If the arches are near lawns or walks roll back the turf for a few feet, stir the soil, and add manure, then the trees will go on satisfactorily each year without showing signs of age or decay.

The pretty miniature Polyantha Roses are charming for small beds, or for edging larger ones, and as they make compact bushy growth little pruning is necessary. Thin out the shoots here and there, sometimes cut away an old branch, and wiry looking little bushes will be formed. Perle d'Or (orange), Cecile Brunner (pink and yellow), and White Pet, are favourite varieties that all should grow.—H. D.

A Note on Pruning.

THE question of pruning Roses is constantly being brought forward, and many excellent articles have been written on the subject. The interest in the queen of flowers is, however, so great, that one may turn again to the subject without fear of opposition, and in the certain knowledge that, to inexperienced amateurs at any rate, the remarks are sure to be welcome. Where only a few dozen Roses are grown the whole may be pruned in one day; but where they are cultivated in large numbers, or by hundreds, they should be pruned at two or three different times, as this will be the means of securing a much longer succession of bloom.

We have Rose beds in several portions of the pleasure gardens. Some of these are in very sheltered positions, while others are considerably exposed, and those most sheltered are pruned first. Those attended to first are producing strong shoots, which will be well advanced before the latest have formed any leaves, and in this way we may not be able to have a great number of blooms at one time, but they will be coming in for many weeks, and this is what is most desired by all who have a constant supply of cut flowers to provide. The second blooms, which are always much valued, generally come in August and September, sometimes in October, and the time of pruning in spring has much influence on the last Roses as well as the first.

When Roses are not in leaf at pruning time, none of us seems much afraid to cut them well down; but when the shoots are 2 or 3 inches long, as many of them will be soon, it is with regret, if not fear, that they are cut. In consequence many of the shoots are left much longer than would otherwise be the case, and the result is that many of the plants have very long bare stems at the bottom and a bushy top, which is neither very ornamental, nor productive of fine blooms. Dwarf Rose bushes are very liable to assume this form, and if they are to be useful pruning must not be spared. Every stem, whether it has the appearance of starting into growth near the ground or not, should be cut down to 2 or 3 inches from the soil, and after this, although they may be a little longer in starting, it will be surprising where the number of young shoots have come from, and it will be still more astonishing when it is seen the improvement which will take place with them before the end of the season. We treated many plants in this way last season, and the results were satisfactory in the highest degree.

Marechal Niel for Walls.

The beautiful and popular Maréchal Niel has had some attention of late, and I should like to refer to the fact that it can be grown on a south or west wall out of doors, and a good plant growing under favourable conditions is an object of rare beauty. It is a climbing plant, essentially worthy of having some special treatment. It is a good plan to take out the soil of the border 2 feet deep where it is proposed to plant the Rose, and if the soil is very light it may not be necessary to put in any drainage, but if the subsoil is clayey we should excavate 6 inches deeper, and put 9 inches of brickbats at the bottom, and over this a layer of turf, grass side downwards. The border ought to be made at least 3 feet wide, and should be twice as much long. The soil should be turfy loam, fresh if you can get it, chopped up roughly, and to this add a fourth of well decayed manure, thoroughly incorporating it with the soil. Procure a plant on the Briar, budded close to the soil, and a year from the bud. Do not have an old stunted plant, they seldom do any good, and those that have been grown under glass and highly fed, so as to make a sappy shoot of 8 or 10 feet length in a season, and in a small pot, are not worth having at a gift. Plant so that the whole of the stock is covered with soil, making the latter firm about the plant. Mulch the roots with short manure, and give water if the weather is dry. A strong plant will bear scores of magnificent blooms.—ROSARIAN.

Reminiscences of An Old Florist.—No. 5.

AMONGST those figures who loomed large in the horticultural world some forty or more years ago, and with whom I had a good deal to say, was John Standish. He was conspicuous in every way, and when one saw his burly figure and genial countenance coming into any place of meeting, one was sure the meeting would not be dull. It was under his auspices, I believe, that Robert Fortune paid his second visit to Japan, and when he had been sending home the treasures he had collected I was with Standish at Bagshot when they arrived. There were flowering plants, shrubs and bulbs, and his sanguine temperament made him see everything in its most rosy aspect. He put up a number of tiffany houses to shelter his plants, but unfortunately the breezy downs of Bagshot were too exposed, and some of these came to grief.

This was just before the opening of the Royal Horticultural Society's gardens at South Kensington, and as Messrs. Veitch & Sons had also their collector in Japan in the person of Mr. J. G. Veitch, both of these eminent firms were anxious to get their productions there for the opening day. There was one plant especially to which much attention had been attracted, as it was believed this would create a great sensation. Messrs. Veitch and Sons won the race, and were rewarded by the great crowds which clustered round their plant during the whole of the day. It was thus that *Lilium auratum* (the golden rayed Lily of Japan) first came before the British public. I believe the first bulb sold was purchased by the late Mr. Sigismund Rucker for £15 15s. Since then what thousands, I may say millions, have been imported from Japan, and what a rich harvest the clever nurserymen of those islands have reaped from it. Still there is a difficulty experienced in growing it, which nearly all cultivators have felt. I say nearly all, because now and then one does come across a vigorous clump. As a rule growers treat it more like an annual, they go to the auction marts, buy a quantity of the bulbs, but they never expect to see anything of them again after the first year; some they may grow for themselves, and others they dispose of.

There is another flower in which Mr. Standish took a great interest at one time, the *Gladiolus*, but he had a very curious notion concerning it; he believed that the poor heathy soil of Bagshot was especially adapted for them, and in fact recommended for their cultivation that where the soil is not poor enough it should be burnt. Experience has proved how utterly wrong this was, for they thrive best in the rich unctuous loam of Cambridgeshire and Somersetshire. Mr. Standish raised a number of seedlings, some of which he distributed, but they were never of any great value, and they would cut a sorry figure alongside of the splendid blooms which we are now in the habit of seeing in the metropolis raised by Kelway, and Burrell.

When Roses first began to come to the front and new varieties were beginning to reach us from France, Mr. Standish's attention was attracted to them, and being acquainted with Mons. Le Roy of Angers, and hearing that his foreman, Trouillard, had been engaged in raising seedlings, he determined to go and see for himself what they were. It was somewhere in the sixties that Standish determined to go to France, and as I was much interested about Roses, he asked me to accompany him. What a jolly time we had of it! We stayed in Paris and visited some of the principal nurserymen there; thence we went on to Tours, passing through the beautiful and historic country of Touraine, and at last reached Angers. The result of this trip was that Standish had the satisfaction of exhibiting in the Hanover Square rooms that grandly coloured Rose, a seedling of *Géant des Batailles*, Eugène Appert. I do not think that in colour it has ever been excelled, while its foliage, so beautifully dark and velvety, added considerably to its merits. Its shape, however, was indifferent, and now it is very rarely seen. But there was another Rose which we saw there that has proved to be a great acquisition—*Celine Forestier*. This was purchased and distributed by Mr. Standish, and as a garden Rose is greatly valued. Its delightful colour and floriferousness give it a great claim on the lover of a garden; yet it is not an exhibition Rose. Nevertheless I have seen some very creditable blooms of it in exhibition stands. Standish was very anxious himself to raise some good Roses, never succeeding, however. One he raised which he called Canon Hole, but it was not up to the mark.

John Standish always brings to my mind another very keen florist, the Rev. Joshua Dix. He was an enthusiastic angler, and many a day's fishing did Standish procure for him. Though he was a great lover of angling, he was also a great lover of a garden. Before I came here he officiated as the curate of the next parish, and some friends of his resided in Westwell. They, too, were lovers of the garden, and many were the choice plants that their friend used to procure for them. It was on their house that there grew the finest plant of Cloth of Gold Rose I think I ever saw. The first year that I saw it, it had from 200 to 300 flowers,

and it was a sight worth going many miles to see. The house itself belonged to a neighbouring landlord, and when the ladies died his gardener was let loose upon the place to alter it, and I may say to spoil it. The poor Cloth of Gold was cut down! and so thoroughly resented the insult that it never flourished afterwards. Moreover, the perpetrator of this Gothic act never seemed to think he had done anything barbaric. Mr. Dix was also a great lover of the *Gladiolus*, and tried to make the flower more popular by getting up a special exhibition of it. I have, however, digressed a good deal from my journey to France with Mr. Standish.

Le Roy's nursery was at that time, and I believe is still, celebrated for his wonderful collection of Pear trees. The climate of Angers was, of course, favourable for them, and as we went through the gardens we saw magnificent specimens of the most celebrated varieties. Surely an immense number of the collection were utterly useless; and, after all, it is not on the 400 or 500 varieties on which Pear growers' attention is fixed, but on a comparatively smaller number of selected sorts. At that time Camellias were very much in favour, and there was one grower at Angers—Mons. Cachet—who had a collection of very beautiful plants; I believe they were grown entirely in the open air, but were placed during the summer between high evergreen hedges, the brilliancy of their foliage being unsurpassable. It is singular how fashion changes! at that time no more grateful present could be made to a young lady going to a ball than a bloom of a white Camellia; now the Rose must take its place.

On our way back from Angers we stopped in Paris and visited together some of the more famous nurseries around that capital. They compared very unfavourably with those of our own metropolis, and even as far as the Rose nurseries were concerned there was always disappointment. A thunderstorm had occurred, and the Roses were all spoiled! This we were told so often that we began to think thunderstorms were ordered on purpose. Amongst those visited were Thibaut and Keteleer, where we were most hospitably received, but in no garden did we see the signs of lavish expenditure that meet us in many of the grand establishments about London. After we had finished our brief but pleasant journey to France, I had many talks with Mr. Standish, and discussed his various plans, some of which, to say the least, were visionary. Amongst these may be classed his ideas of rushing Strawberries to early market. He proposed to start an express between Ascot and London, to be run by post horses, the relays of which were to be placed all along the route. Like most enthusiasts, he never saw any difficulty in the way! they were all brushed aside as unworthy of consideration. He was one of those men whose worth it is always pleasant to remember. I am always thankful that I was enabled with the assistance of many friends to have his portrait and that of his friend, Mr. Dix, placed in the Council room of the Royal Horticultural Society. It may be that before long they will have a more appropriate place than that which they at present occupy. But I wondered at that time whether either of them would be remembered, or whether they would share the fate of that marble bust that used to be in the conservatory of South Kensington, and which when the Society removed from that ill-omened place no one could be found to tell whom it represented.—D., Deal.

Gardening in the Sixteenth Century.

Our Earliest Writer.

THOMAS HILL is said to be the earliest English writer on gardening. The date of the first of several editions on "The Profitable Arte of Gardening, &c.," does not seem quite clear. The Hon. Miss Amherst, in her "History of Gardening in England," mentions his first work as "A most briefe and pleasant treatyse, teachynge howe to dress, sow, and set a garden," A.D. 1563; and adds, "A second edition is unknown." In a list of his works at the end of another edition, described as being "the thyrde time increased," A.D. 1568, he mentions that of A.D. 1563 as having been "encreased by me ye seconde tyme." To this third edition, of which I propose to give some account, is added "The Physicke Helpe" to each of the plants described. Having no previous English authorities on gardening, Hill was obliged to go back to the ancients, and gives a list of some twenty or more Greek and Roman writers from whom he compiled his work.

Old English Garden Plans.

A woodcut of a garden gives an idea of what prevailed from the earliest times to the seventeenth century, when landscape gardening came into vogue. It consisted of a rectangular enclosure made by walls, palings, or shrubs with trees, in which a well and an arbour were recognised necessities; the beds were laid out in rectangular forms with paths between them. He also gives two

designs of mazes, one circular and the other rectangular,* which seem to have been favourite structures in his day. He describes the best position for a garden as facing E or S., and away from barns and stables, in order to avoid chaff. The nature of the soil should be well studied, so that "naughty and filthy sand and gravel" may be avoided. "A quicke sette hedge" should enclose it, and he recommends sowing the seeds of Brambles and Briars, as the "wilde Eglantine."† The seeds should be mixed with meal of tares and pasted or smeared over a tarred rope laid in a trench and then covered over with earth.

Each border, called an *area* by the ancients, was devoted generally to a single kind of plant. There were culinary vegetables and drug plants, though the former were supposed to have their virtues as well; So Hill gives the "physicke helpes" of each one. Few flowers were grown for their own sake, though many had their own virtues, such as Roses, Violets, Marigolds, and others.

A contemporary French writer under the name Carolus Stephanus‡ (who also compiles and follows the Roman writers), gives an *area* devoted to flowers used as chaplets and garlands, of which the ancients made much use. Indeed others than young women bore chaplets; thus Chaucer describes the sompnour§ among the Canterbury pilgrims as having "a garland set upon his head."

Sowing Lore.

In sowing seed the age of the seeds should be carefully noted, as some grew better when young, others when old; and he suggests a plan of sowing several kinds in one hole, so that a *single* plant would bear many sorts of flowers!

Astrology comes in occasionally as the phases of the moon indicate the proper periods for sowing; since "seeds might not grow through some malice of the celestial bodies." Hence a paragraph is devoted to the proper time of sowing, according to the position of the moon.¶ It runs as follows:—"The moone beyng betwene the 28 degree of Taurus and the eleventh of Gemini, sowe. And the moone beinge between the 28 of Gemini and the 6 of Cancer, sowe not," &c., &c. As no one is likely to pay any attention to these directions now, I will spare the reader the remainder!

Watering should be done in the morning and evening with lukewarm water; and if the well be deep the water should be exposed to the sun for a few days before being used. Manure may be mixed with the water.

With regard to making of arbours Hill writes:—"After the newe digging and turning up againe, the garden must then be garnished with herbers before the quarters and beddes be cast out and devised. And you maye make these herbers, either straight running up, or els vaulted or close over the head like to the vyne herbers nowe a dayes made."

A wholesome warning against trusting newly procured seeds is given:—"You may not put your whole hope, that vndoubtedly they wyll prospere, in that it is doubtfull whether they wyll prosper, or no."

Combating Garden Pests.

The animal world seems to have been very annoying, if the numerous remedies against injury by them be any indication. The following are a few examples:—Steeping seeds in the juise of House-leek is recommended, as it makes birds intoxicated! Worms should be smoked out of their holes to prevent them gnawing the roots of herbs. If Roket (Rocket?) be sown among plants flies will not come near them. Sharp vinegar with henbane juice sprinkled upon the herbs is a good deterrent to insects, or the water of Fleabane and Nigella. As for caterpillars, the trees should be sprinkled with bloody twigs, or hung with river creauisses (cray-fish). The smoke of brimstone and Garlic leaves, or Squill bulbs hung about, also keep them off.

To keep moles away, Palma Christi, or Tickweed (Castor-oil plant) and Walnuts full of brimstone chaffe and rosin put into their hole, stopping up all other holes, they get choked by the fumes. An "easy manner" is as follows:—"Get a quicke (live) mole, putting the same into a deepe earthen pottle, set onto the edge into the earthe, which mole. . . wil crie out, and after the other moles in that ground do thus heare him crie, they will hastily drawe neare vnto him, and minding to help him furth, wil so fall into the pot." To keep ants away, smere the stems with oil of Lupines, or put the heart of an owl into the ants' nest, when they will be driven away. Remedies against mice, adders, gnats, breezes (whiche bee flies that eate the

corne as it groweth), and others are given, more ridiculous than sensible.

To destroy "rust when it is falling on the herbes" pungent smoke from burning horn and dung, blown by the wind upon the plants, is recommended; or water in which the wild Cucumber or Colocynth has been bruised, should be sprinkled over the plants. This last is interesting as foreshadowing the modern method of spraying with various fungicides.

Garden Stock of Sixteenth Century.

"The Seconde Booke instructeth the diverse maner of sowynge, setting, and ordering of the moste potherbes, flowers, &c., with the care and secretes taught." To each follows "the physicke helpes."

The following are nearly all the plants mentioned as being the most important to be cultivated in a garden of the sixteenth century. *Potherbs*.—Lettuce, Endive, Succory, Spinach, Orache or Arage, Beet, Coleworts, Asparagus, and Mallows. *Kitchen Herbs*.—Cress, Savory, Lovage, Anise, Cummin, Coriander, Dill, Mustard, Fennel, Pennyroyal, Rosemary, Cnervil, Lavender, Rue, Hyssop, Mint, Thyme, Marjoram, and Basil. *Flowers*.—Roses, Violet, Marigolde, White Lily, Wood Lily, Iris, Peony, White Poppy, Gillyflower, Carnation, Borage, Bugloss, Germander, the Blessed Thistle, and Purslane. *Kitchen Vegetables*.—Artichoke, Leek, Onion, Garlic, Great Garlic, Radish, Navew, Parsnip, and Carot. *Fruits*.—Melon, Cucumber, Gourd, Strawberry, Bean of Egypt*. A few others not readily identifiable complete the list.—GEORGE HENSLOW.

Chamærops Fortunei.

ALTHOUGH this handsome Palm will endure a great amount of cold it does not flourish out of doors everywhere, and where it will not its appearance is anything but what it ought to be. My experience with it dates to many years back, when I became the possessor of half a dozen medium-sized plants. A portion of them I brought forward in pots, the remainder were planted out in a cold pit. They remained in that pit about two years, when three or four of them were planted out, two in small circular beds on the turf in a tolerably good position, but not sheltered from winds, and I soon found the tips of the foliage became browned and useless. Though this was by degrees replaced by other foliage the plants still presented a crippled appearance, only a portion of the base of the leaf remaining, and the points being all destroyed.

Of course the progress of the plant is slow; but one which had a more sheltered position, being planted on a south border amongst Yuccas and Irises, where the wind had little chance of injuring it, flourished. Although we subsequently had some rather severe winters after it was placed in this position it never showed the least injury either from wind or frost, and looked as well as other plants of a like kind in pots in the greenhouse. It is a slow growing plant, and consequently may not be a general favourite, but it must be remembered that its appearance is good at all times, and if grown at all it ought to occupy the favoured position undisturbed for at least half a dozen years.

As a sort of Oriental poetry attaches to the name of Palm, a species that survives an English winter must at all times be interesting. Patience is the only requisite in its culture to insure success, for this plant cannot be multiplied like the ordinary occupants of the flower garden; indeed, I have never been able to increase my stock by any other means than from seeds. The quality of these must not be too hastily condemned, for they are very irregular in germinating. On one occasion, when I procured seeds, I placed each one in a separate pot at the beginning of February, and put these receptacles in a very warm pit. If my memory serves me truly, none of the seedlings came through the soil until May. Some came up at various times during the summer, the last one appearing as late as November, or at least nine months after sowing.

Thus it will be seen that it is unwise to hurry the plant, which when well grown is such an attractive addition to the garden. Of course it is very largely used in subtropical gardening, for which purpose it is admirably adapted; but in this case, as with many other occupants of this department, it spends the winter under glass, and only comes out of doors during the genial days of the summer. On this phase of its culture I need say nothing, as it is thoroughly understood, and my object in writing this note is simply to encourage its trial (where such has not already been done) as a permanent occupant of suitable positions in the flower garden or other desirable places.—R. J., Devon.

* This is reproduced by Hon. Miss Amherst, Op. Cit., p. 119.

† Eglantine in the fourteenth century was the Dog Rose, but the name was transferred to the Sweet Briar in the sixteenth.

‡ His real name was Charles Estienne (see "The Praise of Gardens," by Sieveking, p. 43).

§ I.e., a summoner or apparitor.

¶ So Virgil says: "Even the moon has made different days lucky for work in various ways." (Geor. I.).

* Faba egiptiaca was Colocasia antiquorum (Schott), but was also a name for the Lupin, which is probably meant here.



Parsnips.—It was said the other day at the Drill Hall that the superb samples of Tender and True Parsnip shown by Mr. E. Beckett were of the Student variety. But the true Student, or in any case the variety that is in commerce as the Student, has raised necks and not hollow crowns as Tender and True has. To satisfy critics Mr. Beckett sent me samples of both varieties, and I find them to be exactly as stated. Tender and True seems to have been a white and more refined selection from the old Hollow Crown. It is a delicious variety, the flesh being very soft and marrowy, whilst the roots as a rule are less coarse than are those of the Hollow Crown. Tender and True Parsnip is to be grown with others at Chiswick this year, that its distinctness may be tested.—A.

Giant Onions.—As the outcome of a little talk the other day as to the keeping qualities of giant Onion bulbs, Mr. Beckett has kindly sent me along from Elstree a few samples of his splendid bulbs of last season's growth to show how his have kept. These bulbs, of perfect form and finish, and varying from 1½ to 2 lbs. in weight, are as hard as nuts and certainly would keep well in a cool dry place till the end of April at least, yet they have been ripe and pulled since the middle of September last. That there are wet cold seasons when giant bulbs do not finish off well or keep well there can be no doubt, but even small or ordinary spring-sown bulbs are similarly affected. No one must conclude henceforth that giant winter-raised Onion will not keep well if fully matured.—A. D.

London's Almond Trees.—After referring to the swelling buds of the Almond trees in the London suburbs and dilating upon their popularity, a writer in a contemporary proceeds:—"Though originally a child of the East of Asia and the North of Africa, the Bitter Almond, or *Amygdalus communis amara*, came into this country more centuries ago than anyone can tell. As far back as the eleventh century it was a favourite with high and low, under the delightful name of Easterne Nutbeam, and our good old gardening friend Gerard tells us that in his time Almond trees were 'in our London gardens and orchards in great plenty.' Thus it has gone on blossoming before any other shrub or tree, and taking with its graceful bloom the harshness from our harsh month of March; decking itself with foliage as decorative almost as that of the Ilex, and standing, each autumn, with its harvest of egg-shaped, velvety fruit, which gapes when ripe, throws its 'nutte' lavishly on the ground, and goes contentedly to sleep. Come snow, come frost, come storm and flood and stress, with death and destruction to other imported plants, the Almond survives them all, and justifies in its adopted country as well as in its Eastern home, the reputation implied in its Hebrew name, Shakad—i.e., early awakening."

Bonemeal for Vines.—It is doubtful whether the value of bone-meal is fully recognised for application to Vine borders as a surface dressing. Last season I saw some old Vines treated to a fairly liberal application, and the numbers of roots that were attracted to the surface were remarkable, as were others which issued from the main stem on the border line. Bonemeal enters largely into the composition of some prepared manures, and no doubt with pot plants it has a beneficial action in inducing root activity. In the case of Vines, however, it would not avail much in attracting roots to the surface, unless some provision is made to assist their progress when formed. A dressing of decayed manure and fresh soil would furnish this, and give the roots something agreeable in which to burrow and at the same time to feed upon. Active surface roots are always held as a sign of satisfaction on the part of the Vine, and such a response to the treatment given cannot be otherwise than gratifying to the grower. I was so impressed by the action of bonemeal in the case under notice that I resolved to give it a similar trial, not only to Vines but other fruit trees, as an alternative to other specially prepared dry manures. I remember some years since, when fish manure was so freely used, the quick response there was in surface roots from Vines. I do not know whether there is any standard quality in bonemeals, or if the same results can be expected from every preparation. It may not be so.—R. A.

Blue Gums.—Reading the English papers one finds occasionally an article referring to something with which we in New Zealand are more familiar than the writers, and they amuse us a little. For instance, some time ago someone spoke of "Blue Gums" *Eucalyptus* as trees that "shed their bark instead of their leaves." That they shed their bark is undoubtedly correct, but they could give any deciduous tree you ever heard of points, and then beat them at leaf shedding. They are evergreen, of course, but are shedding leaves every day in the year, particularly in summer, when dry weather compels them to relieve the strain, and the ground beneath them is always strewn. In this respect they are rivalled only by Pines, notably insignis and maritima, and the "Karaka" *Corynocarpus levigata*. --W. H. T.

The Witch Hazels.—The pleasing sight of a cut branch profusely laden with the attractive and curiously composed flowers of that winter-flowering Witch Hazel (*Hamamelis arborea* syn. *japonica*), actuates me in attempting to draw increased attention to this most desirable species. The flowers are produced in pairs on separate stalks, two of which latter spring from a bud on the ripened wood. Unlike the Japanese Allspice (*Chimonanthus fragrans*), and the Carolina Allspice (*Calycanthus floridus*), the flowers of the Witch Hazels are unfortunately devoid of appreciable scent. The Virginian species (*H. virginica*), produces its flowers in the autumn, and its fruits ripen in the spring time. In conclusion it may be interesting to remark that the name Witch Hazel is due to the supposed virtues of a forked twig as a "divining rod."—G. W.

Trees for Different Soils.—The experiences of our most successful foresters go to show that trees are just as particular in the matter of soils as are almost any other plants. Some delight in deep loamy land, others are at their best on thin shallow soils, on which, under ordinary circumstances, a deep-rooting plant would be expected to find the greatest difficulty in maintaining an existence. Among the trees which do best on very shallow soils are, says a contemporary, the Spruce, the Mountain Ash, the Birch, and the Mountain Pine. Soils of medium depth are best suited for the Alder, the Beech, and Austrian and Weymouth Pines. Soils which are deeper still are required for the Scotch Pine, the Silver Fir, the Elm, Maple, Ash, and Lime; while the Larch and the Oak are capable of producing the best results only where the roots are given an opportunity of penetrating to a very considerable depth.

Blackberries in New Zealand.—A correspondent writes from Wellington, New Zealand:—"I was interested in reading an account in the Journal of Blackberry gathering in Australia. We do some of that. At a place called Kaitoke, over thirty miles from here, at the foot of the Tarrarna Ranges, is a valley where Blackberries luxuriate. To get there for blackberrying it is usual for parties to go in vans, each having a pair of horses, for though the railway is near the spot it would not be convenient for the purpose. I have been several times, principally, however, to see the Ferns. We leave here about six o'clock on Saturday evening. Eight miles of the journey winds around the western side of our harbour, then through a flat fertile valley, or rather two, called respectively Lower Hutt and Silverstream, and Upper Hutt. This part of the journey is about twenty miles. Lower Hutt contains our two chief nurseries and most of the market gardeners who supply Wellington with green vegetables. After getting out of the valley we ascend a small mountain (Mungaroa), around the spurs of which the steep road winds in a fashion quite alarming to newcomers. Up this we have to travel on shank's pony for nearly an hour, then dip down to the Pankuratchi (pronounced Pokrati) river. A further slight ascent is negotiated, and we are at our destination. The time, about 1 A.M. We next gather logs, which are abundant, make a fire in the open air, boil billies, and make tea. After supper, those who can manage it wrap their coats about them, and stretch out near the fire for forty winks; no one gets much more, for I must tell you that the nights here are always cold. Daylight shows the Blackberry bushes hanging on the steep sides, and dotted about the bottom of a snug valley beneath us. How they came there originally I do not know. There they are, and there is the fruit, bushels of it. About three hours of work will gather 70 lbs. of selected fruit, gathering none but the ripest and best. We start for home again in the evening. The Blackberry ground is, as I said, in a valley, perhaps I should have said gully, less than half a mile long, but is at a considerable elevation above sea level—I do not know exactly, but I suppose about 1000 feet. It is subject to frequent rains."

Zonal Pelargoniums.

THERE are two methods of establishing a collection of single and double Zonal Pelargoniums. The better system, where there is no stock of good varieties to fall back upon, is to consult the catalogues of those nurserymen who cultivate the best and newest varieties, as new and improved sorts are constantly being added to the cream of the older varieties. Good varieties are as easily cultivated as indifferent ones, hence when they are cultivated in quantity for decoration and cutting, also bedding, endeavours should be made to keep up to date. There is considerable interest attached to the growing of Zonal Pelargoniums, and few cultivators of plants care to be without them during the summer months. Many of the varieties are adapted for blooming in winter, though not with the same freedom as in summer; but to have them at their best during the dull months flowering must be restricted in summer, and a regular heat of 50° and a dry atmosphere accorded between December and March.

Plants which are procured now may be had in thumb pots, or obtained as rooted cuttings out of pots. In the latter case pot them when received in a light sandy mixture in the small pots referred to, placing them near the glass in a heated house. If moist soil is used in potting light sprinklings of tepid water may be used for a few days, and then afford a good watering. Rooting will proceed, and soon fill the pots with roots, when a shift may be given to the next size pot. The plants can have cooler treatment after they commence to root in the small pots.

Cuttings can be procured as well as rooted plants, or cuttings may be readily obtained, perhaps, from tall plants of good varieties. Vigorous, firm, short-jointed cuttings are the easiest to root. Their length may be 3 or 4 inches. Cut the base squarely below a joint, and remove the lowest leaves. Should the cuttings be soft and sappy, owing to better not being procurable, let the base dry an hour or two before insertion. When growing them for pot culture insert the cuttings singly in thumb pots, using turfy loam, leaf soil, and plenty of sand. Insert the cuttings firmly in the centre of the pots; several cuttings may also be placed round the edges of 3-inch pots. This is a much readier method, and with care in dividing at the time of potting little if any check is given. After inserting the cuttings water them in with a rosed can, and stand the pots on a warm, dry shelf in the full sun, applying no direct shade to prevent flagging, as is the case with the majority of cuttings. The lower leaves may flag, but the central parts usually remain fresh. As the soil dries on the surface sprinkle the cuttings lightly with the syringe. Heavy waterings are not needed, and may, if given, sour the soil and prevent rooting. When fairly well rooted transfer the plants to cooler and airier quarters, as it is essential they make a short-jointed steady growth.

On the pots becoming filled with roots move the single-rooted cuttings to 3½-inch pots, and in the case of several cuttings in one pot divide these singly, and put also in 2½ to 3½-inch pots. The compost may consist of turfy loam, one-fifth of decayed manure and sand, potting firmly. The situation best adapted for the plants at this stage is a shelf in the greenhouse. Water carefully at first, until the roots begin to work freely, when more water may be given, never allowing the soil to become dry.

The next potting should be to 5-inch pots, similar compost to that previously recommended being employed. Drain the pots well, and over the rough parts of the drainage, which may consist of moss, bits of turf, or riddings from the compost, sprinkle a dusting of soot. This will assist in preventing worms entering the compost. Frame treatment is best for them at this stage, standing the pots on a moist base. The frame can be kept closed for a few days to encourage fresh rooting, after which admit air freely and expose fully on every favourable occasion. In July, August, and part of September outdoor treatment may be given them entirely if intended for winter blooming, removing all flower stems until September. After the plants have been placed in 5-inch pots those not wanted for winter may be allowed to bloom as they will. During August liquid manure can be beneficially applied once or twice a week to well rooted plants intended for winter blooming. The points of the shoots nipped out several times during the early stages of growth will produce a bushy habit of plant.

A few good varieties among the singles are Rev. Dr. Morris, Brilliant, Stella Massey, Mr. W. Brown, Agnes, Swanley Single White, Henry Jacoby, Dr. McDonald, Herrick, Delicata, Lord Wolseley, Cassiope, Phyllis, Mrs. J. E. Taylor, Albion, Niagara. In the double class the following are excellent:—F. V. Raspail Improved, Madame Leon Dalloy, Magenta King, Gloire de France, Madame

Rosain, Swanley Double White, and Pearl. King of Denmark, also known as Beauté Poitevine, and Mdle. Trine, are good winter bloomers.

It is important that cuttings of bedding Pelargoniums in pots or boxes should now be transferred singly to pots, 4 inches diameter being a suitable size for strong cuttings, 3-inch size for those with a lesser quantity of roots. After potting place in a little heat and moisture to restart them into growth, but when once again making roots cooler positions must be found for them, eventually placing them in frames on a moist base. Afford due supplies of water and abundance of air on favourable occasions. Protect the glass at night when frosts prevail in late April or May. This treatment will gradually harden them to the open air.—E. D. S.

Tabernæmontanas.

TABERNÆMONTANA coronaria flore-pleno is a beautiful evergreen flowering shrub which at one time most deservedly occupied a very prominent position amongst stove plants. It does not, however, appear to be so much appreciated at the present time as its merits deserve. In habit and character it is very similar to the much-prized Gardenia. Its flowers, which are freely produced from the forks of the branches of from ten to twelve in a cluster, are pure white and fragrant. Having been very successful in the cultivation of this plant I will relate my experience, trusting it may be of interest to the readers of the Journal.

Cuttings of half-ripened wood may be inserted any time during the spring or summer, but I much prefer the spring. Two or three cuttings can be placed in a 60-size pot, afterwards plunging in a good bottom heat. When rooted the young plants must be removed from the frame and gradually inured to air, afterwards placing them singly in small pots. Use a compost of good lumpy loam and fibrous peat in equal proportions, one-third partly decayed leaf soil with a little dried cow manure, and a fair proportion of sharp silver sand. Before the roots become much restricted for room the plants should have liberal shifts as these are requisite, for on no account must they be allowed to become root-bound or they will quickly present a stunted appearance. The process of watering must be very judiciously performed till the roots have taken full possession of the soil, after which water may be applied with greater freedom. Where practicable I recommend a stock of young plants to be raised every two or three years, as by this method much better flowers are produced than it is possible to obtain from older plants.

Having so far dealt with the cultivation of young plants I will now make a few remarks in reference to old ones; for although, as before mentioned, the flowers are not so large as on younger plants, they are nevertheless produced in much greater numbers, thereby making them indispensable where a large supply has to be maintained. Plants that are too large for general requirements should be kept rather dry for two or three days after flowering, after which they may be pruned back to the old wood. No fear need be entertained in reference to over-pruning, as I know of no hardwooded plant that recovers itself after severe pruning more readily than the Tabernæmontana. The plants should be liberally syringed two or three times a day till the young growths appear, at which stage it will be necessary to repot them. Remove some of the old soil from the ball, afterwards placing the plants in the same sized pot as it was previously in, using a compost similar to that above recommended.

There are other kinds of Tabernæmontanas, one of the best being *T. cymosa flore-pleno*. This variety, it appears, was originally obtained from a Belgian garden, and by some growers is considered superior to the double *T. coronaria*. It is occasionally offered in trade catalogues as *T. camassa*, and is said to be more profuse in blooming than the first mentioned and more generally grown form.

Tabernæmontanas are subject at all stages of their growth to the attacks of various insect pests, mealy bug being especially troublesome. A sharp watch must, therefore, be kept, and upon their first appearance immediate steps should be taken to insure their removal, for if once this pest is allowed to become thoroughly established it will be found very difficult to eradicate. One of the best insecticides that I have tried for the removal of mealy bug is petroleum. This should be used in proportion of a wineglassful to 3 gallons of water, the whole being thoroughly mixed by filling the syringe two or three times, and returning its contents back into the can, repeating this operation at about every six or eight syringefuls. If this is performed, say, once a fortnight, and the plants syringed twice a day with clean water, it would do much towards preventing the attacks of insects, and at the same time be very beneficial to the growth of the plant.—G. P.



American Chrysanthemums.

IN the past many sterling varieties, both Japanese and incurved, have been sent to us by American raisers. For the last season or two, however, there has been a lull in that quarter. This year we are promised several additions to both sections by that enterprising raiser, Mr. Nathan Smith, of the Adrian Nurseries, Mich., U.S.A. No less than nine novelties are enumerated; they are described as pedigree varieties, the names of the parents being given in each instance. From photographs of the blooms and the raiser's descriptions I have an opportunity of forming a fair knowledge of the quality of each. As a rule varieties raised outside of England improve when subjected to the cultural methods practised here. For the benefit of English cultivators I will describe those I think likely to be of service to growers during the coming season.

Foremost amongst them is White Bonnaffon. As its name implies it belongs to the incurved section, and should prove a welcome addition just now when this type of flower is at rather a low ebb in England. The new comer is a cross between Mrs. H. Robinson and Mrs. H. McY. Twombly. In formation the florets are identical with Major Bonnaffon, while the colour is pure white. In habit of growth it is short-jointed, with large dark-green leaves; it is not more than 3 feet, though I suspect that under the cultural conditions practised at home it will assume a greater height. Orizaba is a Japanese incurved of a pleasing shade of light pink. When we consider that its parents were Mrs. E. G. Hill and Mrs. W. C. Egan, it will be granted that its form should be of the best. This, too, is dwarf in growth.

Amongst Japanese several varieties call for favourable comment. Foremost is Lavender Queen, its parents being Mrs. James Eadie and Thanksgiving. It is a full-sized Japanese with florets rather below medium width, filling up in the centre well, and making a bloom of great depth. The colour appears to be unique—a soft shade of lavender pink; under artificial light it shows to perfection. Goldmine is from H. L. Sunderbruck and Modesto, both desirable varieties well known to English cultivators. In colour it is a rich golden yellow. The florets are broad, slightly recurving at the edge; the tip curls and whorls. The centre is quite full, building up a large solid bloom that should prove advantageous to cultivators.

Monrovia superba and Nerota, from their appearance as photographs, do not appeal to my taste. The blooms appear to be built up with rather short, stiff florets, lacking grace, as we judge of it in our standard of excellence. Pluma belongs to the hairy section, and is delicate pink in colour. Judging from its appearance it should prove a desirable addition to the section.—E. MOLYNEUX.

The Royal Horticultural Society.

Scientific Committee, February 27th.

Present: Dr. M. T. Masters (in the chair); Mr. Michael, Mr. E. Im Thurn, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

The Lucombe Oak.—Specimens of foliage and acorns were received from Rev. J. H. Ward of Silvertown Rectory, Exeter, from a tree growing in the churchyard, requesting for information as to their identity. Dr. Masters has supplied the following details. "I believe the leaf and acorns exhibited to be those of the Lucombe Oak, or from one of its descendants. The Lucombe Oak was a hybrid between the Turkey Oak (*Q. Cerris*) and the Cork Oak (*Q. Suber*). The leaves are all but evergreen; indeed, in some of the varieties, quite so. As is the case generally with hybrids, the descendants from the first cross vary extremely, consequently there are many forms and varieties of the Lucombe Oak in existence. As the specimens came from Exeter there is additional ground for presuming it to be descended from the Lucombe, as the original tree was raised in the nursery of Lucombe, Pince and Co., of Exeter. The Fulham Oak, raised in the Fulham Nurseries, had a similar origin, and now I believe it to be impossible to distinguish its descendants from those of the Lucombe Oak. A full account of these Oaks will be found in Loudon's "Arboretum," vol. iii.

Large Yew Tree.—Mr. Ward also mentions the fact of a Yew tree in the same churchyard being 25 feet in circumference at a height of 4 feet from the ground, and asks if it is a reasonable conjecture that the tree was planted before the Norman Conquest.

Data as to the rate of growth of Yew trees have been supplied from trees planted in Basildon churchyard in 1726. They have been measured in 1780, 1796, 1834, and 1889. They were found, after

a commencing period of more rapid growth, to be pretty regularly increased by one line (one-twelfth of an inch) per annum. (See "Nature," October 17th, 1889).

Bulbiferous Scilla.—A plant of *Scilla nutans* was received from Mr. Alex. Mortimer, 1, Paper Buildings, Temple, in which the outer bulb scale had become greatly elongated upwards, forming a closed tube. It bore two small bulbs on the inner surface, and was greatly thickened at the summit, as if attempting to form a larger bulb; but no other than the above two were developed. They both possessed small rolled-up green leaves.

Orange malformed.—Dr. Masters showed an Orange having a band of paler and smoother rind than the rest of the skin. It was referred to Dr. Bonavia for examination, who writes as follows:—"It somewhat resembles the Bigaradier tricolor Orange, which has a yellow skin, with orange stripes when ripe. Again, the Bigaradier bizarrerie has smooth parts of an orange colour, and warty parts yellow. These parti-coloured Oranges are normal." Dr. Bonavia would theoretically explain this peculiarity by referring to the "fingered" Orange, which he regards as a whorl of modified leaves, coalescing to form a covering to the inner portion of the fruit. To apply this theory to the case in question, he would compare the paler portion to, say, a *Euonymus*, which may have green leaves with an occasional yellow one, or again he would compare it with striped petals, as of the York and Lancaster Rose. The objection to Dr. Bonavia's ingenious theory lies in the fact that the paler coloured stripe did not correspond with a single carpel but covered the half of one and the half of the adjacent carpel, so it would represent two halves of different capillary leaves. Secondly, striped flowers are probably the result of crossing two whole-coloured flowers. This is obviously the case with *Petunias*, a purple and white flowered species having been the parents of all our garden forms. So that it would seem more probable that the Orange had received the pollen of a smoothskinned variety, and the tubes penetrating one placenta, common to two adjacent carpels, had influenced the surface on both sides of the division. Similar stripes have been known to occur on the fruit of one variety of *Theobroma* (Cocoa) when pollinated by a second variety. Dr. Bonavia's report will appear in full in the Journal of the Royal Horticultural Society.

Drill Hall, March 13th.

THE exhibition in the Drill Hall on Tuesday was a most attractive one, both in the quality of the products shown and their diversity. Seldom has the hall been better occupied, and rarely has a better display of early flowers been seen.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); Rev. W. Wilks, and Messrs. R. Parker, E. Beckett, E. Shaw Blaker, J. Cheal, M. Gleeson, J. H. Veitch, A. H. Pearson, W. Pope, A. Dean, S. Mortimer, A. F. Barron, J. W. Bates, H. Markham, C. Herrin, G. Wythes, G. Kelf, F. Q. Lane, G. Reynolds, W. J. Empson, J. Smith, G. Norman, J. Willard, G. Bunyard, and W. Poupard.

Mr. R. Parker, gardener to the Duke of Richmond and Gordon, sent baskets of Goodwood Pippin Apple in fine condition; also Wellington, and two other varieties with local names. The King's Acre Nurseries, Ltd., Hereford, also sent a dish of King's Acre Pippin, which was staged in sound condition. Mr. C. Ross, gardener to Capt. Carstairs, Welford Park, Newbury, sent a good dish of White Nonpareil. A few other dishes were also staged by exhibitors, but failed to secure recognition from the committee. Radishes were staged in three varieties by Mr. J. Crook, Forde Abbey, Chard. They were well grown and of good flavour.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Druery, H. B. May, R. Dean, G. Reuthe, J. H. Fitt, W. Howe, J. Hudson, J. Jennings, J. F. McLeod, R. Fife, C. J. Salter, W. H. Lees, J. Fraser, G. Gordon, C. Jefferies, J. Walker, W. Bain, J. D. Pawle, E. H. Jenkins, H. S. Leonard, C. E. Shea, W. J. James, H. J. Jones, H. J. Cutbush, C. Blick, G. Paul, J. W. Barr, T. W. Sanders, and E. Mawley.

Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood, arranged a pleasing display of flowering and foliage plants; the former were arranged in baskets, while the latter formed a good background and edging to the exhibit. The flowers were *Genista fragrans*, *Begonias*, *Ericas*, *Cinerarias*, *Mignonette*, *Cyclamens*, and *Hyacinths*. These, with the Palms and Ferns, were attractive. Ferns were well represented by Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, who staged a great variety of specimens, also baskets containing species and varieties with tinted and variegated foliage, which included *Doodia aspera multifida*, beautifully coloured; *Athyrium Goringianum pictum*, and *Adiantum scutum roseum*, *Farleyense*, and *Collisi*, also *Blechnum latifolium*. The specimens were grown in Messrs. Hill's well-known style (silver Banksian medal).

Messrs. W. Paul & Son, Waltham Cross, arranged a large exhibit of hardy flowering shrubs, which was much admired, and attracted great attention. The *Camellia* and *Carnation* flowered Peaches were delightful at this period, as were plants of *Prunus triloba* in splendid condition. The double white Peach and *P. sanguinea flore-pleno* were also attractive, while plants of *Staphylea colchica*, *Forsythia suspensa*, and *Clematis indivisa lobata* all contributed to make a welcome addition to the display (silver-gilt Banksian medal).

A fine group of *Clematises* was arranged by Mr. H. B. May, Upper Edmonton, all tastefully displayed with Ferns, Palms, and Bamboos,

while a few plants of Spinners and Gloire de Lorraine Begonias added a special feature. The Clematises were grown in 5-inch pots, and were laden with flowers. The most prominent were Lord Wolsoley, Mrs. Quilter, Miss Bateman, and Lady Lonsborough.

Messrs. Barr & Sons, Covent Garden, opened the Narcissus season with a pretty display. The chief forms were coronatus, Victoria, telamonius plenus, Golden Spur, Henry Irving, ornatus, spinus, Horsefieldi, and Sir Watkin; also hardy Cyclamens in variety, Crocuses in various forms, and Chionodoxas, Lachenalias, and Irises. A pretty display for the season.

Messrs. J. Laing & Sons, Forest Hill, again staged a fine table of foliage and flowering plants, chiefly of the decorative type. The most attractive subjects were Azaleas in variety, Epacrises, Calla Elliotiana, and Clivias. The foliage plants, however, formed a good feature, and included well grown plants of Crotons, Dracaenas, Palms, and Ferns. Messrs. Paul & Son, Cheshunt, staged an interesting display of alpine and rock plants, with Hellebores and a few spring flowering plants. The Hellebores were represented by *H. colchicus coccineus*, *H. c. punctatus*, *H. orientalis*, and *H. o. Gretchen Heineman*. The Saxifragas also formed a pleasing feature (bronze Banksian medal).

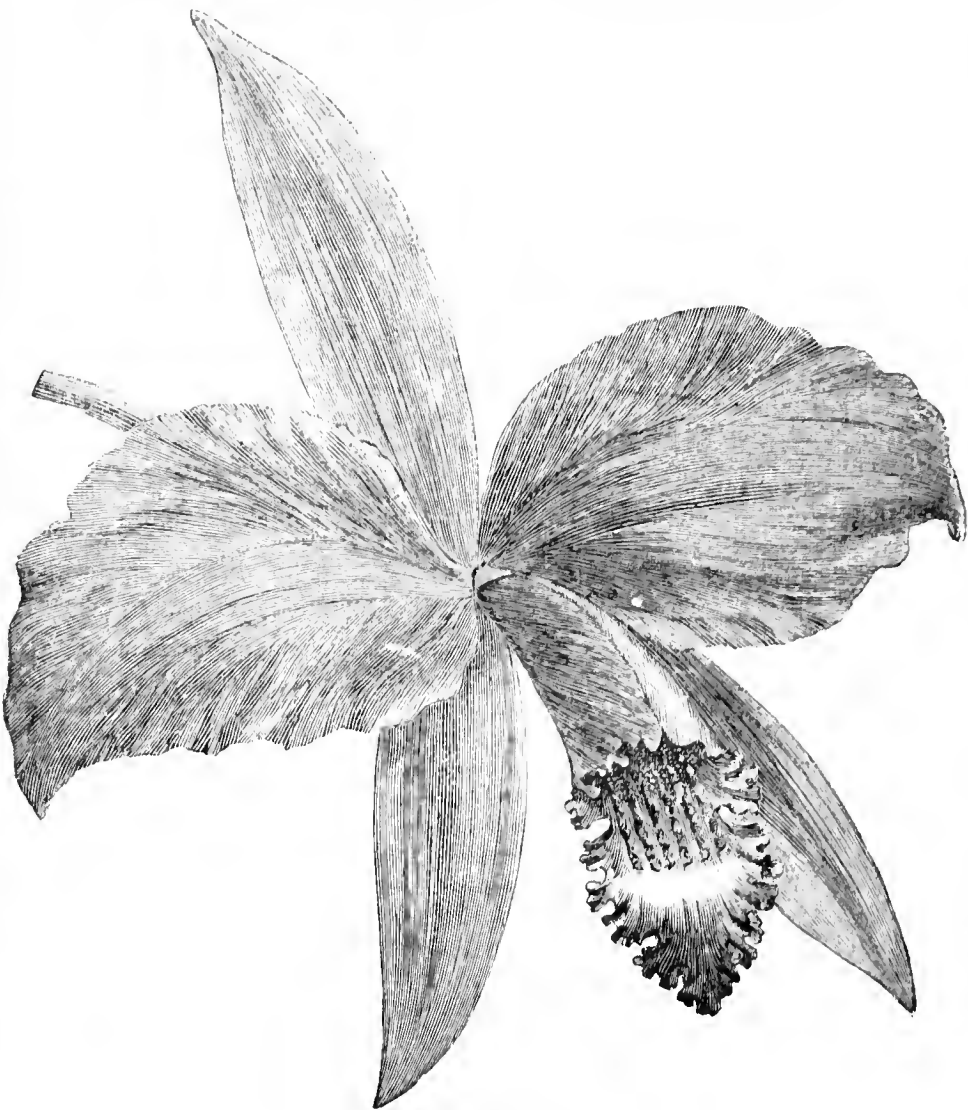


FIG. 63.—LÆLIA JONGHEANA.

A large table of Azalea mollis seedlings was staged in good condition by Mr. J. Russell, Richmond. The plants were shown in a variety of colours, and had evidently been well developed (silver Banksian medal). Messrs. J. James & Son, Farnham Royal, Slough, have been noted as specialists in the cultivation of the Cineraria, but it is doubtful if they have ever staged so perfect a strain as seen on this occasion. The plants left little to be desired as far as habit is concerned, while the flowers, both in form and colour, testify to the skill and care that has been expended in building up this noted strain (silver-gilt Banksian medal). Messrs. Sutton & Sons, Reading, arranged a table of Cinerarias in two varieties, Sutton's Light Blue, a variety of dwarf habit and pleasing colour, and Sutton's New Pink, a pink.

A table of fine Azalea mollis was contributed by Messrs. R. & G. Cuthbert, Southgate. The plants were dense masses of flowers in their well-known delicate tints, with a groundwork of Ferns (silver Banksian medal). Mr. Geo. Mount again sent up some glorious Roses, comprising boxes of Captain Hayward and Catherine Mermet, with Mrs. J. Laing and Captain Hayward on long stems, all in first-rate form, with good foliage (silver Banksian medal). Some well grown Cyclamens were staged by the Church Road Nursery Co., Hanwell.

Messrs. Wm. Cutbush & Son, Highgate, presented a large table of Ericas in variety, some well flowered Epacrises, Begonia Gloire de Lorraine, Ericas, Acacias, and Boronias, while the hardy plants were Pyrus malus floribunda, Staphylea colchica, Laurus, and double flowering Peaches, the whole arranged with Palms, Azaleas, and a front of Ficus repens. A small group of plants was staged by Messrs. R. Wallace & Co., Colchester, comprising a basket of Anemone blanda and Ranunculus ciliatus.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, staged a table of Primulas, which included *P. stellata* and *P. rosea*. Mrs. Makins (a floriferous white), Gigantic Rose, and Gigantic Blue in the ordinary fringed types were good, as were also the double forms, Double Salmon, an effective colour; Double Crimson, a bright colour; and Double Mauve. The same firm also exhibited a small group of Cerasus pseudo-Cerasus Watereri in excellent condition. The plants were full of flower, and the delicate blush of the petals made them quite noticeable. Mr. H. J. Jones, Rycroft Nursery, Lewisham, staged a table of spring flowers, consisting of Hyacinths and Narcissi. The former were represented by a large number of varieties, while the latter contained well developed bunches of Mrs. Thomson, Horsefieldi, Henry Irving, Sir Watkin, ornatus, and obvallaris (silver Banksian medal).

ORCHID COMMITTEE.—Present: J. G. Fowler, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshaw, H. Ballantine, N. C. Cookson, H. Little, J. T. Gabriel, H. J. Chapman, J. W. Potter, F. Sander, E. Hill, W. H. White, H. T. Pitt, H. Tracy, W. H. Young, F. J. Thorne, and J. Douglas.

Mr. H. Whiffen, gardener to J. Bradshaw, Esq., The Grange, Southgate, arranged a small group of Orchids. There were several forms of Cattleya Trianae, including the chastely beautiful *C. T. Amesiana* and *C. T. amana*, with *Coelogyne cristata alba*, *Laelia harpophylla*, and a few *Odontoglossums* (silver Banksian medal). Messrs. H. Low and Co., Bush Hill Park, exhibited a small group in which *Dendrobium Wardianum* Lowi, a splendid plant of *D. Brymerianum*, *D. Fitchianum*, *D. Madonna*, *D. Ainsworthi intertextum*, *D. Dowianum*, *D. nobile* Murrhinianum, *Colax jugosus*, and a few others were conspicuous. Mr. J. M. Black, gardener to R. G. Thwaites, Esq., Streatham, sent several Orchids, including *Dendrobiums* and *Odontoglossums*.

Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, showed a collection of *Dendrobiums*, including several superb varieties. The plants were excellently grown and carried flowers of exceptional size and substance. The varieties comprised principally forms of *splendidissimum* and *Ainsworthi*, with many others (silver Flora medal). Messrs. J. Cypher & Co., Cheltenham, staged a small collection mainly of *Odontoglossums*. There were several well-known varieties as well as one or two seedlings. Mr. W. J. Empson, gardener to A. H. Wingfield, Esq., Amptill, exhibited a few *Cypripediums*.

The smaller exhibits of Orchids were very numerous, and included specimens from Messrs. W. H. White, W. Murray, H. J. Chapman, H. A. Tracey, H. Low & Co., H. Whiffen, R. Roberts, H. Garnet, F. Sander & Co., and J. Veitch & Sons.

Certificates and Awards of Merit.

Dendrobium Burberryanum (W. H. White).—This is a hybrid that resulted from a cross between *D. Findleyanum* and *D. Dominicanum*. It is a lovely form. The sepals and petals are rich red, as is the front lobe of the lip. The central portion is cream, and the side lobes of the throat reddish crimson (award of merit).

Laelia Jongheana (Messrs. F. W. Thurgood, F. J. Thorne, and F. Sander & Co.).—This is an Orchid that was shown by the above exhibitors with slight variations of form and colour. The sepals and petals are flat, and of a rose purple, the lip being white with a heavily limbriated rose lip and a yellow throat (award of merit). See illustration fig. 63.

Odontoglossum crispum, *Oakfield Sunrise* (R. Roberts).—The sepals are white, suffused with cream and one or two pin head spots of chocolate. The sepals except the white tips are chocolate crimson (award of merit).

Odontoglossum elegans, *Eastwood Park variety* (H. Ballantino).—A most attractive Orchid. The sepals and petals are delicate rose, with both large and small brown spots (first-class certificate).

Pentapterygium serpens (J. Downes).—An uncommon Himalayan plant with bright red tubular flowers hanging beneath the growths (award of merit).

The Evolution of Plants.

The attendance at the afternoon meeting in the Drill Hall, when Mr. R. Irwin Lynch, the distinguished curator of the Cambridge Botanical Garden, read a paper on this subject, was not nearly so large as might have been expected considering the interest and importance of the topic. There were large numbers of persons in the body of the hall, and it speaks well for the enthusiasm of various gentlemen that the society continues able to provide these papers, for there was on this, as on other occasions, a continuous buzz that was annoying to the audience at the lecture and must have been very disconcerting to the lecturer. As we have said before we wish something could be done to mitigate this trouble.

The field covered by the title of Mr. Lynch's discourse is a tremendously wide one, which becomes more and more interesting the deeper it is penetrated. Considering the experience of the essayist it need scarcely be said that the subject was treated of in a most entertaining manner, while at the same time the essayist succeeded in maintaining its instructive aspect. Notwithstanding the strain that Mr. Lynch was undergoing the noise prevented those at the back from hearing much that was said. The complete text will, however, be given in the Journal of Royal Horticultural Society, and will be eagerly read by many persons.



Hardy Fruit Garden.

Grafting Fruit Trees.—Healthy and vigorous fruit trees that grow well and produce good wood and foliage but do not bear fruit, may be changed in character by grafting upon them scions of superior varieties. The trees which are to be operated on require the branches to be headed down to near the point selected for inserting the scions. This heading down is best carried out several weeks prior to grafting, but a fresh slice ought always to be removed on the day of inserting the scions, because then the edges of the bark work freely and the grafts are more readily fixed.

Scions must be in a dormant condition when inserted, and to insure maintaining them quiescent from the time they are cut from the trees to preparing them for insertion, they must be laid in moist soil nearly their full length under a north wall.

Proper Time for Grafting.—The exact time for inserting grafts is just when growth commences on trees in general. Of course, trees headed down completely to bare wood have no buds to show when growth commences, but neighbouring trees indicate this; therefore, noting them, it is safe to assume that the sap is beginning to be active in the headed down trees. From the middle to the end of March is usually the best time; in late seasons early April.

Crown or Ring Grafting.—This is the best form of grafting for large branches and all stocks over an inch in diameter. Several scions or grafts may be attached to one stock, allowing a couple of inches between each. Slit the bark down the side about 2 inches, passing just through the bark. Select the middle part of the previous year's shoots to form the scions, each containing four buds. Cut these the same length as the slit in the stock, the cut being made in a slanting direction downwards. At the upper edge of the cut make a short transverse incision, which will form a shoulder by which the scion can be firmly seated on the stock. Lift the bark on each side of the slit in the stock, and pass the scion firmly, but gently, down until the proper position is reached. It is important that the inner barks of both stock and scion should exactly join in order that a good union may be formed. When a convenient number of scions have been attached to each branch secure them all in at once with some soft tying material, and cover the whole with grafting wax. Maintain moisture by damp moss secured round.

Side or Whip Grafting.—Young stocks less than an inch in diameter may be grafted simply by this method, working quite low down. In this case the scion ought to be the same thickness as the stock. The top of the stock should be a slanting cut, made upwards, 3 inches long. The cut in the scion must be downwards the same length, and made to fit as exactly as possible. Choose good ripe wood with bold buds as scions, though the buds ought to be quite dormant. When the grafts are secured, tied in, and waxed, soil can be heaped round. This will further tend to keep all regularly moist.

Completion of Pruning.—Standard fruit trees, bushes and wall trees, which have not hitherto been pruned or regulated this season, must be attended to at once. Nothing is better for standard trees than the practice of thinning-out branches wherever they are crowded, especially removing those crossing and interlacing, not shortening them as a makeshift, but cutting them out entirely close to the main branches from which they spring. Bush trees should have the main branches reduced in number if it is apparent that too many exist for the welfare of the trees. No varieties of Apples and Pears ought to have the main branches closer together than a foot, and some of the more vigorous growers, having spurs longer than normal, will be all the more prolific at 15 to 18 inches asunder; also reduce the length of spurs, and thin-out where unduly crowded.

Now that Gooseberries are fairly advanced in growth, a little pruning away of shoots which may have been denuded of buds will be advantageous, giving the bushes all the mere chance for accommodating the fruitful shoots. Newly planted Gooseberries and Currants may have the shoots shortened two-thirds, so that the resulting growth will be strong and vigorous for establishing a shapely tree or bush.

Raspberries may also be shortened, established canes having the tips removed to the tops of the stakes or trellis, and young newly planted canes cut closely down near the soil.

Attend also to wall trees. Horizontal and fan-trained may have every other branch taken out, or such as will admit of those remaining having sufficient space, and being well placed for the fruiting spurs to receive more light and air. Vacancies caused by the removal of dead wood or worn-out branches may possibly be filled up with young shoots from the base or other parts. It is necessary to obtain them from as near the base as possible, thus maintaining a well balanced and furnished tree. In the case of Morollo Cherries on walls secure a fair quantity of young wood, nailing it in about 4 inches apart, leaving it, as a rule, unshortened. Cut out old and weak wood.

Fruit Forcing.

Peaches and Nectarines.—*Early Forced Trees.*—During the stoning process an equable temperature is desirable. Too much heat at night deprives the trees of rest, and this is not favourable to the fruit. Cold draughts in the daytime sometimes give a sudden check fatal to the crop. Attend to thinning the fruit betimes. Secure all shoots required for extension to the trellis as they progress, stopping successional growths at a length of about 15 inches, and pinch laterals at the first leaf, also succeeding growths as made. Shoots retained to attract the sap to the fruit stopped to one leaf, they having previously had the first growth pinched at the second or third leaf. Avoid stimulating the trees whilst stoning, but afford due supplies of water and food of a phosphatic rather than nitrogenous nature.

Second Early Forced Trees.—Proceed with disbudding, a shoot being left at the base of the present year's bearing wood, and one level with or beyond the fruit. The first must be trained forward, but the latter should be stopped at the second or third joint. Upon extensions leave young shoots at 15 to 18 inches distance, the growth from the extremity being trained as a continuation of the primary branch. Commence tying early, as when the shoots are allowed to grow considerably they cannot be brought down without danger of breaking. Guard against overcrowding, as it is fatal to fine, highly coloured fruits and the formation and perfection of the wood for future crops. Thin the fruits by degrees, leaving these well disposed upon the upper side of the trellis.

Houses Started at the Beginning of February.—Any trees still in blossom should be fertilised when the pollen is ripe. When the fruit is all set recourse must be had to syringing in the morning and afternoon of fine days, but an occasional sprinkling, with damping the house, will suffice in dull weather, always having the foliage and young fruit dry before night. Disbudding must be done gradually, commencing with the most forward growths, also thinning the fruit after it is seen which takes the lead in swelling. A temperature of 55° at night, 5° less on cold mornings, 55° to 60° by day, advancing to 65° or 70° with gleams of sun, will bring the fruit on sufficiently fast, ventilating from 55° to 60°, and not allowing an advance above 65° without full ventilation.

Houses Started Early in March.—With the flowers expanding syringing the trees must cease, for there is danger, especially in dull weather, of weakening the blossom and converting the pollen into paste. An occasional syringing may, however, be practised if the weather be unusually bright and the atmosphere dry. Damping the floors and borders is generally sufficient and a safer plan. Admit air freely in mild weather and fertilise the flowers on fine days. Maintain the night temperature at 45° to 50°, 55° by day and 65° from sun heat. Admit a little air constantly, increase the ventilation at 50°, and give more as the heat rises, having full air on at 65°, closing at 50°. Superfluous flowers on the under side or back of the shoots may be removed.

Late Houses.—Where the roof-lights have been removed they should be replaced, the buds being well advanced in swelling, and promise an abundant crop of fruit. If there are any traces of aphides apply an insecticide or fumigate the house before the flowers expand. Nothing conduces more to a good set than removing the flowers on the under side or back of the trellis, and turning on the heat after the anthers show for a short time in the early part of the day, to advance the temperature to 50° and to permit of ventilation, as if there is a prevalence of dull, cold weather at that time, closing the ventilator for protection prejudices the pollen. Houses that have fixed roof-lights must have the borders rendered thoroughly moist, but not made sodden and sour.

Pines.—*Suckers.*—The rooting of potted suckers will be indicated by the growth of the foliage, but it is well to turn the plants out of the pots, or a portion of them, to ascertain the condition of the roots and the soil. The young roots which issue from the base of suckers or plants similarly treated are very tender and susceptible of injury from the effects of too much bottom heat, hence when the roots reach the sides of the pots 85° is ample, above which there is danger. When the bottom heat is excessive the pots must be raised, placing some loose tan under and around them to allow the superfluous heat to pass away without injuring the roots. The plants should be carefully supplied with water and not have too much top heat; nor be too far from the glass, or they will become drawn and weakly.

Potting.—Once the suckers and other plants subjected to similar treatment start they make roots rapidly, therefore have soil ready for transferring to the fruiting pots, as it is important that they be grown without check, by being either root-bound or dry. Sound, fibrous loam in good sized lumps is the best material for potting, rejecting the dusty particles. It should be pressed firmly round the balls of the plants, watering them if the soil be dry (not otherwise) with tepid water, and plunging them in a bottom heat of 90° to 95° until the roots have possession of the fresh soil, when 85° is more suitable. The top heat should be at 60° to 65° at night, and 70° to 75° by day, with 10° to 15° rise from sun heat.

Fruiting Plants.—Those at or near the flowering stage should have a night temperature of 65° to 70°, and 75° by day, with 80° to 90° from sun heat, closing at 85°, well damping paths and walls at the same time. Successional plants may have a bottom heat of about 85°, ventilating at 80° and closing at 85°, lightly sprinkling the plants occasionally.

A genial atmosphere; should be secured by damping the floors and pit walls as they become dry, but it is not good practice to syringe the bed between the plants. Examine the plants once a week and supply tepid water containing a little stimulating substance, such as guano or soot, when required.

Trade Catalogues Received.

Cooper, Taber & Co., Ltd., Southwark Street.—*Wholesale Agricultural Seed Catalogue.*

R. Dean, Ealing.—*Seeds.*

Ellwanger & Barry, Rochester, N.Z.—*Plants.*

W. H. Hudson, High Road, Kilburn.—*Seeds.*

W. Watson & Sons, Clontarf Nurseries, Dublin.—*Plants.*



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Tabernaemontanas (*F. G. B., Lincs.*).—The thoroughly practical article by "G. P.", on page 230, will no doubt give you all the information you require respecting these plants. If, however, you wish further information on this or any subject and will write, we shall be pleased to assist you.

Sowing Gypsophila elegans (*Gyp.*).—Seed of this hardy annual, which has feathery white and pink flowers, may be sown outdoors about the middle of April. Choose light fertile soil in an open position, working it well, and make it fine on the surface. Sow the seed on this bed, and just cover with a sprinkling of fine potting soil. When the seedlings attain to the height of an inch gradually thin them out to 6 inches apart, and maintain the soil about them clean and loose on the surface.

Eucharis Infested with Mite (*C. A.*).—The bulbs are infested with mite, which accounts for the unsatisfactory state of the plants. It is generally advisable, when the plants become infested with this pest, to turn them out and cleanse the bulbs by means of some approved insecticide, there being few better than hot water, as hot as it can be borne by the hand for a minute (about 145°), letting the bulbs remain in at that time, rinsing or moving up and down so as to get the water into the scales or outer coating of the bulbs. They can then be potted in soil which has been scalded previously, so as to allow for draining and getting into good condition for potting. The plants should have bottom heat so as to accelerate root action, and get them quickly re-established. This answers for a time, but in mite districts it seems to get on the plants again, when occasional applications of Clibran's Eucharis mite killer will keep it down, carefully following the instructions. You may use soluble phenyle, one part to ninety-six parts soft water, or 1 gill ($\frac{1}{4}$ pint) to 3 gallons of water. Both may make the plants rather queer for a short time, but they recover, the substances then acting as manure.

Ivy-leaved Pelargoniums (*M. S.*).—Defective root action, caused either by over-watering, over-dryness, or a too great fall in the temperature at some time, has led to the injury to the shoot enclosed. Perhaps the best plan to adopt now would be to let the soil get nearly dry, then cut back the shoots below all the diseased parts, and after fresh growths push remove half of the old soil or more, and place fresh compost round the roots. A mixture of five parts loam, one of dried manure crumbled into small particles, one of leaf mould, and one composed of equal parts of wood ashes (or crushed charcoal) and sand, will form a suitable compost.

Vine Leaves Yellow Spotted (*G. G. B.*).—The leaves show no traces of parasites. Their appearance is probably due to a deficiency of chlorophyll resulting from the recent dull and cold weather. This almost precluded ventilation, and in consequence there has been a slight defect of tissue formation and consequent thinness of foliage, which has been acted upon somewhat injuriously by a recurrence of brighter weather and drier atmosphere. We can only advise very careful ventilation, commencing early, and so admitting it as not to induce sudden drying, maintaining, however, some evaporation, so as to secure foliage of stouter texture. It would also be advisable to allow as much lateral extension as consistent with the full exposure of the foliage to light and air, always avoiding overcrowding or interfering with the access of light to the principal leaves. The fertiliser you name ought to have improved the colour of the foliage, and a top-dressing of the undermentioned mixture will be followed by beneficial results:—Dissolved bones, dry and crumbling, 3 parts; powdered saltpetre, 2 parts; sulphate of magnesia, 1 part, mixed, using 3 or 4 ozs. per square yard. A light mulching of sweetened horse droppings would also increase the root action, and likewise the foliage, improving its colour by the ammonia. This, however, must not be excessive, or it will injure the foliage and tender growths.

Plants for Beds (*Ladysmith*).—The plan is a very difficult one for effective bedding, a bed with a design inside being far superior to a chopped arrangement. Summer bedding:—No. 5, 6, 9, 10, Arundo Donax variegata, one plant each centre; Fuchsia Coral Bedder (Lyes'), 2 feet apart; Viola Snowflake, white, or Viola A. J. Rowberry, yellow, as may be preferred for a groundwork. No. 2, 3, 13, 15, Chlorophytum (Anthericum) elatum variegatum, dotted 2 feet apart; Ageratum Swanley Blue or Lobelia Emperor William, groundwork. No. 1, 7, 12, Koniga maritima for white groundwork, dotted with Begonia semperflorens Zulu. No. 4, 8, 11, 14, Heliotropium Miss Nightingale, blue, dotted with Veronica Andersoni. No. 16, 18, Pelargonium Ivyleaf Madame Crousse, pink, dotted with Centaurea candidissima. No. 17, Begonias tuberosa, orange or bronze. No. 19, Roses in variety. No. 20, Carnations, Picotees, and Pinks. No. 21, Lilliums, Irises, Paeonies, Phloxes, Delphiniums. No. 22, Tritonia (Montbretia), Tigridia, Gladiolus, and Calochortus vars. Spring bedding:—No. 5, 6, 9, 10, Wallflower Belvoir Castle, yellow; Tulip Vermilion Brilliant. No. 2, 3, 13, 15, Wallflower Ruby Gem, Tulip Ophir d'Or, yellow. No. 4, 8, 11, 14, Wallflower Blood-red, Tulip Keisers Kroon, yellow and scarlet. No. 16, 18, Myosotis dissitiflora, blue; Tulip La Candeur, white. No. 1, 7, 12, Bellis Snowflake, double white; Bellis Rob Roy, double red. No. 17, Tulip Roi Pepin, rosy carmine striped white. No. 19, Narcissus in variety, Hyacinths in variety, Violas, Stocks East Lothian or Brompton. No. 20, Scilla sibirica and var. alba, S. bifolia and var. alba, Muscari botryoides and var. alba, Chionodoxa Lucilæ and var. alba, C. Tmolnsi, blue; Crocus in variety. No. 21, Hepatica in variety, Fritillaria in variety, Primroses and Polyanthus in variety. No. 22, Galanthus, Eranthis, Auricula, Alpine vars. Ranunculus, Turban in variety.

Names of Fruits.—*Notice*.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (*J. L. W.*).—Schoolmaster. (*T. P.*).—1, Court of Wick; 2, Cox's Orange Pippin; 3, Blenheim Pippin; 4, Bramley's Seedling; 5, Wellington; 6, unknown and worthless. (*A. S.*).—1, Lord Derby; Beauty of Stoke; 3, Tower of Glamis; 4, Nouvelle Fulvie; 5, Josephine de Malines; 6, Bergamotte Espereu.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. H.*).—1, *Cornus mas*; 2 and 3, seedling forms of *Cupressus Lawsoniana*; 4, *Thuopsis dolabrata*. (*W. P.*).—1, *Acacia longifolia*; 2, *A. ovata*; 3, *Fuchsia procumbens*; 4, *Statice profusa*; 5, *Anthericum variegatum*; 6, *Franseria latifolia*. (*G. A. F.*).—1, *Cattleya Trianae*; 2, *Coelogyne cristata*; 3, *Cypripedium Spicerianum*. (*E. B.*).—1, *Berberis Darwini*; 2, *Daphne Mezereum*; 3, *Crataegus pyracantha*.

Covent Garden Market.—March 14th.

Trade better.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	10 0	Lemons, case ...	4 0	15 0
„ Californian, per case	8 0	14 0	Oranges, per case ...	5 0	15 0
„ Nova Scotian, barrel	15 0	22 0	„ Californian, seedless	16 0	24 0
Cobnuts per 100 lb....	80 0	90 0	Pears, Californian, case...	6 0	9 0
Grapes, black ...	2 6	5 0	Pines, St. Michael's, each	1 0	6 0
„ Muscat... ..	4 0	8 0			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	3 0	Lettuce, doz. ...	0 10	1 2
Asparagus, green, bundle	5 0	5 9	Mushrooms, lb....	0 8	0 10
„ giant, bundle	15 0	20 0	Mustard and Cress, punnet	0 2	0 0
Beans, Jersey, per lb..	2 0	2 6	Onions, bag, about 1 cwt.	4 0	8 0
„ Madeira, basket ...	2 6	3 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz....	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, ½ sieve...	1 6	2 0	„ Teneriffe, cwt....	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz.	0 8	0 10
Carrots, per doz. ...	3 0	4 0	„ French, round, doz.	1 6	0 0
Cauliflowers, doz. ...	3 0	4 0	Seakale, doz. baskets ...	9 0	14 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bushel...	3 0	5 0
Endive, doz. ...	1 6	2 0	Sprue, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs. ...	4 6	5 6
Leeks, bunch ...	0 3	0 0	Turnips, bunch... ..	4 0	6 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	24 0	Ferns, small, 100 ...	4 0	10 8 0
Arbor Vitæ, var., doz.	6 0	36 0	„ <i>elastica</i> , each ...	1 6	7 6
Arums, per doz. ...	8 0	12 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, specimen	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Borcnias, doz. ...	20 0	24 0	Hyacinths, Dutch, doz....	10 0	18 0
Drotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	6 0	8 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	0 6	1 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz....	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz.	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	8 0	18 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz.	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz.	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	3 0	Mimosa, per bunch ...	1 6	2 0
Arums ...	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Asparagus, Fern, bunch...	2 0	2 6	Narcissus, white, doz. bun.	2 6	3 6
Bouvardia, bunch ...	0 6	0 9	„ Yellow, doz. bunches	2 0	3 0
Carnations, 12 blooms ...	2 6	3 6	Odontoglossums ...	5 0	7 6
Cattleyas, per doz. ...	10 0	12 0	Pelargoniums, doz. bnchs	8 0	12 0
Daffodils, double, doz. bnch	6 0	8 0	Roses (indoor), doz....	6 0	8 0
„ single, doz. bnch.	6 0	12 0	„ Red, doz....	6 0	8 0
Eucharis, doz. ...	2 0	3 0	„ Safrano, packet ...	3 6	4 0
Fardenias, doz. ...	6 0	8 0	„ Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	5 0	7 6
„ bnchs. ...	6 0	9 0	„ Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	5 0	6 0	„ English (indoor):—		
„ <i>lanceifolium album</i> ...	3 6	4 6	„ La France, doz. ...	6 0	12 0
„ „ <i>rubrum</i> ...	3 6	4 6	„ Mermets, doz ...	3 0	6 0
„ longiflorum, 12 blooms	8 0	10 0	„ Smilax, bunch ...	5 0	6 0
„ lilac, white, bundle ...	4 0	6 0	Tulips, scarlet, bunch.....	0 6	0 8
„ „ mauve, bundle ...	6 0	8 0	„ yellow, bunch.....	1 0	1 6
„ Lily of the Valley, 12 bun.	6 0	18 0	„ bronze, bunch.....	1 0	1 6
„ Maidenhair Fern, doz. bnch	8 0	10 0	Violets, Parma, bunch ...	3 0	4 0
„ Marguerites, doz. bnchs.	3 0	4 0	„ dark, French, doz.	2 0	3 0
„ Yellow, doz. bnchs.	4 0	6 0	„ „ English, doz.	2 0	3 0



Agricultural Demonstrations at Calne.

WE have been favoured with the report of trials by the Wiltshire County Council during the past year. The experiments were conducted in connection with the growth of rotation crops, grass, Clover, and Potatoes.

There were two trial stations, one at Quemerford being on strong clay, the other at Lickhill being on lighter soil, but we have no evidence to show that it is really what is called light land. The rotation crops were such as are generally associated with heavy land, and have no relation to the four-course system; they were Mangolds, Barley, Beans, and Oats.

The experiments had for their principal objects—

- (1.) The proof that really good rotation crops can be grown without the aid of farmyard manure for many years provided that artificials be judiciously employed, and
- (2.) The determination of the quantities of the latter which it may be most economical to apply on a stiff clay soil.

The conclusions arrived at by the committee as expressed in the report are as follows:—

“(1.) That it is quite possible to grow on land such as that at Quemerford good paying rotation crops of Mangolds, Barley, Beans, and Oats for many years in succession, with the aid of artificials, assisted by farmyard manure, all the produce being sold off the land.

“(2.) That manures suitable for the purpose are for Mangolds, nitrate of soda $4\frac{1}{2}$ cwt., salt 3 cwt., and superphosphate 1 cwt. per acre; for Barley, nitrate of soda $1\frac{1}{2}$ cwt., and superphosphate 3 cwt. per acre.

“(3.) That Mangold was most responsive to the action of artificials, and Beans least so.”

We imagine that most people who have been making a study of the results of farm trials which have been conducted during the last half-century have come to the conclusion that a fairly heavy or even strong soil is necessary for success in the continuous growth of cereals. Practical farmers would also be fairly unanimous in preferring a farm inclined to the strong rather than the light side, for the manures, especially the nitrogenous ones, take a much longer time to wash through a strong than through a light soil.

Whether, however, the committee is right in coming to the conclusion that the crops they are growing in small plots are really paying ones may be open to question. When the prophet explains the source of his inspiration there are generally a few unbelievers to be found who scoff at him and his faith. So when we find the Barley crop from strong clay land valued at 45s. per quarter, and Barley straw at £2 per ton to go off the farm, we are inclined to wish that we farmed strong land in a district where maltsters and straw dealers were in such a benevolent humour. Our experience is that Barley is worth only 28s. per quarter from some of the finest Barley land in the country, and that Barley straw may be easily bought at 25s. per ton.

We quite agree with the committee that the use of artificials on strong land should pay, but we would not go so far as to say that artificials will make poor strong land profitable. They may make the contra balance a smaller one, and in some cases even show a small profit; but the hard and stubborn fact is that agricultural prices are too low, and that there is not sufficient encouragement to farmers to speculate by sinking money in expensive manures when the prospect of a profitable return is so extremely uncertain.

One striking feature of these trials is the strong way in which they corroborate the results of the Woburn and Rothamsted experiments. Great stress is laid in the report on the prejudice which is so prevalent against the use of nitrate of soda, this, no doubt, arising from observation of its effects when repeatedly used alone or in excessive quantity, but no danger of exhaustion of the soil need be apprehended as the result of moderate annual dressings if used in conjunction with other suitable artificials, or with fair dressings of farmyard manure.

That Beans did not respond to the use of artificial manures in 1899 is not surprising; the only manure used was basic slag, and the land was probably too dry for the plant to make use of the manure applied. In previous years nitrate of soda and kainit had been tried on Beans with equally futile result, which shows that there were sufficient inexhaustible supplies of phosphoric acid and potash in the soil to produce a crop of Beans without eleventh-hour assistance.

We are somewhat of opinion that, given a good seedbed and a sufficiently full plant to face the summer with, strong land must be very poor indeed if it will not grow a crop of Beans. A great point is the hoeing; they must be kept clean until they are in flower, for the flowers will not set well if the roots are meeting with much competition from weeds.

The effects of artificials were tried on very poor and coarse grass which has sprung up on a plot of land which has gone out of cultivation. Nitrate of soda 2 cwt. and kainit 3 cwt. were tried separately and together; the points noted were, the coarseness of the growth promoted by nitrate alone, the greater vigour of the Clover resulting from the action of the kainit, and the very even and satisfactory nature of the growth where both were used.

The experiments in the growth of Potatoes clearly show the great value of nitrogen for this crop, even in addition to that contained in a good dressing of stable manure. They also show that a moderate dressing of farmyard manure, aided by a mixture of the three artificials, is the most profitable mode of manuring, but this year the omission of kainit was the most and of superphosphate the least felt of the three artificials. During the previous four years, however, 8 tons of manure aided by $4\frac{1}{4}$ cwt. of nitrate of soda had beaten any other manure or mixture of manures.

Potatoes have been grown both on the strong land at Quemerford and on the lighter soil at Lickhill, and we quote two extracts from the report which, we think, speak for themselves.

QUEMERFORD.—“Good crops of Potatoes may be grown here at a profit for four years (probably more) on the same land with artificials alone as a manure provided these contain nitrogen, phosphorus, and potash in suitable form and proportion.”

LICKHILL.—“It would appear that on this ground Potatoes cannot be very profitably grown for several years in succession with the aid of artificials alone.” *Verbum sap.*

Both as Quemerford and Lickhill experiments have been conducted in the use of nitragin. The bacteria of which nitragin consists are obtained in the first place from the nodules of leguminous plants and then increased by cultivation. Twenty-two kinds of nitragin are to be obtained, one for each variety of leguminous plant, and it may be applied either to the seed or to the soil. The better results have been obtained by treating the seed. “Taking the average results for the three years at both stations, a considerable gain has resulted from the employment of nitragin.”

Work on the Home Farm.

At last the weather has taken a turn for the better, and there is a prospect of again getting to work on the land. Spring-tooth cultivators will be more in demand than ever, for there will not be much time now for ploughing. The sowing of the spring corn in a decent seedbed is now the chief anxiety. Some of the Turnip land is so sodden with water that a good mould can hardly be got without ploughing a second time; but if it could be broken up with the drag and harrows at once and left to dry through, one good subsequent rain would make a thorough job of it. Perhaps we shall not get rain when we want it after having had too much.

A farmer tells us that his horses have practically done nothing for

two months, and if the conditions had been more favourable he would have had difficulty in finding men to work them.

Potatoes might soon be planted on land that is already ridged up as soon as the ridges are dry enough to split freely. At any rate, the manure might be got on and shaken out, the planting can then be quickly performed. Potatoes may be put in now on any kind of soil, and there is nothing saved by waiting after the middle of March. Had the last two months been ordinarily dry a large proportion of crop would already have been planted in the typical Potato districts.

An ordinary single-mould-board plough is the best for splitting the ridges, especially if there be a suspicion of wet in them, as it leaves the land lighter than a double-mould-board plough with its more pushing action. The common plough must take three-fourths of the ridge and turn it bodily into the furrow.

Clover seeds must now be purchased and be ready on the premises for sowing with the Barley. Prices of small seeds are decidedly higher than last year, especially Alsike and Cowgrass. Personally, we are not fond of either of these kinds, and shall be quite satisfied with white and red Clover. Good white is 9s. 6d. per stone and red 8s. 6d. Trefoil, too, is dearer; this is useful on dry soils, as it stands drought well, and it is said to be a good preparation for the corn crop following; but experienced flockmasters do not consider it a healthy food for lambs after weaning.

Of one thing we are certain, the best Clover seeds are the cheapest, for they not only produce a better but a much more robust and vigorous plant than small, badly ripened stocks, which are never cheap at any price.

There is only one kind of Ryegrass worth growing for sheep grazing in our opinion, and that is Foster's Dwarf Italian. Ewes are well and healthy, lambs are plentiful and strong, all they want now is mild spring weather.

A WONDERFUL MILKING RECORD.—A noteworthy milking record has been established by the red poll cow Crocus, which belonged to the famous Norfolk dairy herd at Whitlingham. She gave birth to her third calf on May 11th, 1890, since which date she continued uninterruptedly in milk till September 28th, 1899, a period of over nine years, her milk yield in the last week of her life being at the daily rate of $43\frac{1}{2}$ lbs., or nearly $4\frac{1}{2}$ gallons. During the nine years four months that she was continuously in milk she yielded altogether 50,428 lbs., or nearly 23 tons of milk. Over the last five years the average quantity of butter-fat in her milk was as high as 4.3 per cent. Her live weight when sent to market, after being on grass feed for the last six months of her life, was 10 cwt. 1 qr. 11 lbs. In the nine years since her last calving she gave something like forty-five times her own weight in milk, and her average production during that period was 5,403 lbs. of milk, or considerably over 500 gallons per annum. For a moderate-sized cow this is, says a Scottish paper, a remarkable performance, which has aroused much interest amongst the breeders of red polls.

AGRICULTURAL AFFAIRS IN NEW ZEALAND.—A correspondent from Blenheim, Marlborough, New Zealand, writes, dated 16th October:—We have got all our crops in, and they are looking beautiful; in fact, we have never seen the crops looking better than what they are at present. We hope prices will have an upward tendency compared with last year. The Massey-Harris binder is the one most extensively used hereabouts, and does its work splendidly. Barley has proved the best crop this season, and this is chiefly owing to the fine dry weather we have experienced. The prices for Wheat, however, are unfortunately no better than last year so far. The Government have opened up a large block of land, in all about 35,000 acres; this they cut up into sections, running from 50 to 1000 acres. The most of the ground, though of a light quality, is nearly all ploughable. The rents run from 2s. to 6s. per acre the half year. The lands are on the perpetual lease system of 999 years, and they are not allowed to take more than two crops in succession off the same ground, but they are allowed to take one root crop as well, making three crops in all.—(“North British Agriculturist.”)

POULTRY FARMING.—In auctioneers' advertisements one often comes across the announcement of land “suitable for poultry farming.” I believe, in that profession, any land useless for any other purpose is declared suitable for poultry; a bare, bleak, wind-swept field can be thus described, whereas it is nothing of the kind. A well-sheltered piece of land, with an adjoining shrubbery or plantation for raising the chickens in, is a great point to the good in starting. There are, however, many points to be considered. I once rented an almost ideal site for poultry keeping. Part sloped to the west, the rest was flat, sheltered on all sides by hills. There was a small plantation, good hedges, and a little stream ran through one field. There is always a drawback; in this case it was that the land was a third of a mile from the house, a point I did not sufficiently consider when I took it. But anything is better than exposed sites, for, apart from the extra expense of building shelters, the fowls never lay so easily as their more fortunately situated kindred. Never, says a contemporary, take a land agent's view of a suitable poultry site, but use your own eyes and intelligence. Moreover, get fresh land, unless you see the fowls running over it are absolutely healthy.

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Candytuft, Barr's Giant White, very large spikes of snowy white flowers. Per packet, 6d. and 1/-.
Celosia plumosa, Barr's Choice Mixture, handsome feathery plumes of bright colours. Per pkt., 6d. and 1/-.
Lantana, Barr's New Dwarf, a mixture of brilliant colours, charming as a pot plant. Per packet, 1/6.
Lupinus arboreus Snow Queen, a pure white Tree Lupin, fine novelty. Per packet, 1/- and 1/6.
Mignonette, Barr's Covent Garden Favourite, the finest Mignonette for pots or borders, the handsome flower heads are deliciously fragrant. Per pkt., 6d. and 1/-.
Nicotiana sylvestris, a fine white-flowered Tobacco with handsome foliage. Per packet, 6d. and 1/-.
Petunia, Barr's Superb Giant, the largest and handsomest of all the Petunias, immense flowers of rich and varied colours. Per packet, 2/6 and 3/6.
Phacelia campanularia, one of the most lovely blue flowers in cultivation, height 8 in. Per pkt., 6d. and 1/-.
Poppy, Empress of China, snow-white single flowers, with a fringed margin of crimson-scarlet. Per pkt., 6d.
Poppy, Shirley, Barr's extra selected strain of this beautiful annual Poppy. Per packet, 1/-.
Rose, Miniature Fairy, dainty little semi-double flowers of various shades, blooms first season. Per pkt., 6d. & 1/-.
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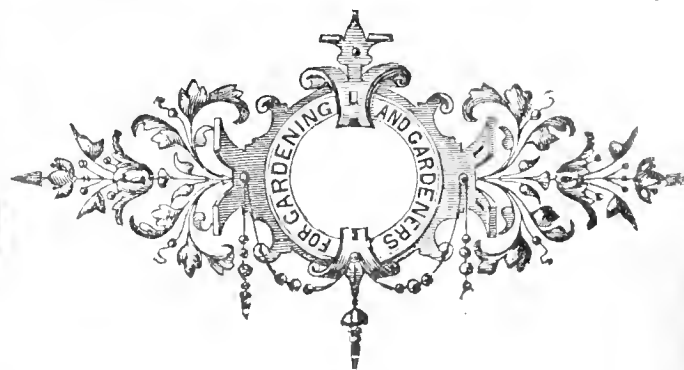
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Journal of Horticulture.

THURSDAY, MARCH 22, 1900.

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The Garden and the House.

IN olden times gardens were never detached from the house, but were invariably delightful appanages of the dwelling. They were not gay in our sense of the word, but they were eminently jolly, with pleached alleys and Honeysuckle covertures, where inquisitive Beatrices could snugly hide and listen; with lengthened arbours where a studious Bacon could walk on sunny days; with elevated mounts from which the surrounding country could be viewed; and with thick hedges pierced at intervals to form recesses in which stood orators, as did Savanarola, to stir with burning words the audience grouped on the walks and alleys around. It was in the gardens, also, that musicians in the time of summer rendered the latest thing out to their patrons.

Its crops were different from ours. Necessarily so, for while we consume vegetables and fruits as foods simply, in those enlightened days the physical qualities of the denizens of the garden were first of all inquired into, and so we find all old gardening books devoting as much and sometimes more space to the medicinal virtues of the plants of which they treat as to their cultivation. Violets in this way were valued as much for their use in pottage as for their sweet smelling flowers, and the common Nettle for the same reason stood on an equality with the Cabbage. In a word the garden, in its crops, as in the uses to which it was put, was very largely an indispensable adjunct to the house, as it was by means of the fruits, flowers, and vegetables it produced the dispensary from which its inmates derived medicines for all sicknesses and salves for every kind of wound and sore.

But by degrees the garden became less a necessity and more a detached piece of ornament. Its flowers were not gathered for distillation, its herbs were scattered as of no worth, and the list of its useful vegetables was greatly curtailed. Gardeners passed their days in a leisurely, dreamy existence. Their staff "took" the harvest and hoed Turnips "by the piece" in the fields of neighbouring farmers,

returning to the garden in the intervals to put in crops and "hough" the weeds. The massing of colours in flower beds, with the disappearance of duty on glass, was the means of bringing unremunerative gardening to its highest pitch. Flowers out of doors and "under" glass alike were produced almost solely to look at, and, no doubt, many of us can yet remember the horror gardeners felt if flowers had to be cut, and I notice that aged proprietors of gardens still reluctantly allow flowers to be so used.

It is plain, however, that we have arrived at a period when the relation of the garden to the house, in at least some aspects, has become as close as it was 250 or 400 years ago. The garden is now more largely than ever a place for the production of material to be used in the house. As many vegetables as formerly are consumed, and much more fruit; but it is in the two items of plants and flowers, which previously were only sparingly employed, that the greatest increase is apparent.

The objective of plant culture has been completely changed, and we do not now produce large specimens as a proof and example of cultural skill, but solely for the use they can be turned to decoratively. Small plants instead of hardly being grown at all have become a constantly pressing necessity, so that in place of one or two large examples of a species which were cultivated for many years and became objects of affection to the grower, dozens or hundreds have now to be produced in the course of a few months, to be then utilised, and not infrequently immediately thereafter thrown away. The system is essentially a wasteful one and fatal to sentiment. The methods of flower production and the ways of employing the flowers are much the same as with plants. Quantities of particular varieties in uninterrupted succession to be used in profusion in the adornment of the house, form the chief end in view. Consequently there is little room for sentiment to expand here either, which is a pity, because the best results cannot be obtained in plant culture in the absence of sentiment.

But when we think of it, there is space for the exercise of as much skill, though of a different kind, in the production of a nine-month "Geranium" as there is in a specimen of a few years old. The one can be produced alone by intelligent and unremitting care, and exactly the same virtues go to make success in the other. From the selection of the cutting in spring till the day the little plant, perfect in leafage and bloom, takes its place in some decorative scheme in autumn, the exercise of qualities of a high order are constantly kept in play. The depressing element, with young people especially, arrives when, after a week or two in the house, the plant returns a wreck; and when this condition is usual from week to week and month to month, the interest in work inevitably slackens.

It must be the business of the head to arrange that this waste of material shall be reduced as far as possible. Care in watering while plants are in rooms is essential, but it is of still more importance that no plant be allowed to remain long enough to suffer bad effects. It will often be found that not only in different rooms do plants exhibit varying effects, but in large apartments plants stand in good condition for a longer time in one place than another. The greatest source of waste in cut flowers arises from unskillful gathering or from ignorance of the nature of the flower. Gardeners err sometimes, but it is by members of the family who like to gather their own flowers that the greatest waste follows. It is no uncommon thing in such cases to have plants pulled up by the roots, foliage shorn over, and when this happens in the case of Freesias, Gladiolus, and even Orchids, the mischief requires no completing.

A most unhappy result of the garden having become so largely a mere manufactory of material for use in the house is the tendency in some quarters to allow the kitchen garden to sink into a condition of semi-neglect. One occasionally finds it rougher than a field, and too often with dirty walks, unkept, or no edgings, and a general air of untidiness that is unsatisfactory. The reason is, of course, that this garden is really a manufactory, and utility with thrifty management ought to rule. Personally I think this is a mistaken view. A kitchen garden can be managed economically, while at the same time sufficiently well kept to be a pleasure to stroll about in. Its borders may be as

profitably, while more ornamentally, filled with flowering plants—Roses and Pæonies—as with Turnips or Potatoes. We certainly cannot stay the ever growing tendency to utilise every department of the garden as a feeder to the house, but that is no reason why we should on that account allow the garden to deteriorate in any way of degree.—B.

Notes on Clematises.

THE Clematis is one of the quickest growing of hardy climbing plants, and is well adapted for covering spaces on walls or buildings, clothing pillars, porches, trellises, arbours, tree trunks, or ruins. These positions will soon be occupied by the growth of the most vigorous kinds, and in spring and summer, or towards autumn as the case may be, a profuse display of flowers will result.

Clematises are divided into groups, termed *florida*, *Jackmanni*, *lanuginosa*, *montana*, *patens*, and *viticella*. Each of these groups possesses characteristics of its own, and to insure securing the best results from the plants the style of growth must be considered, and the time of blooming. Pruning is then carried out in a manner suiting each group, as some flower most freely on the old or ripened wood, while others do so the best on the new wood.

Taking first the *Jackmanni* group, which is probably the best known and most generally used. The varieties in this are summer and autumn blooming, and produce the flowers on new wood between June and October. This allows them to be pruned-in closely each spring. The space allotted to the growths may be covered with a series of main shoots, and the side shoots emanating from them pruned back to within a few buds of the main growths.

The *florida* group produces all double-blooming varieties, which flower between May and July. The ripened growths of the previous year ought in this case to be laid-in freely, shortening them only where space does not permit of the shoots being laid-in further or they are not ripened.

The *lanuginosa* type has flowers of large size, produced in summer and autumn. Practically the previous year's shoots may be retained, with the exception of cutting off about one-third. The blooms come on short lateral shoots, which issue in summer, hence the necessity of retaining the older growths, from which they may be produced.

The *montana* section produces small flowers, but they are very numerous and attractive in the axillary clusters, which spring from the old or ripened wood, plenty of which should be retained each season. As a rule this group receives very little pruning, and is the best type for covering any unsightly object in wild profusion. A grand display of bloom results in May and June.

The next group or *viticella* is a large flowered summer and autumn blooming type, commencing in July and ending in October. The flowers are produced successionally in masses on the new wood, therefore it is best to adopt fairly close pruning. In some positions, or where the flowers are wanted low, cut the plants down to within 2 feet of the soil, but to effectually clothe higher positions the plan recommended for *Jackmanni* type—namely, securing a series of main growths or stems and pruning back the annual growth each season, proves good. The *patens* section, also large flowered, blooms from the old wood during May and June. Prune weak or exhausted wood away, and shorten the tips of the shoots retained.

Clematises pay for generous treatment in regard to providing a liberal root run where the roots may ramify in rich soil. It is desirable to trench or dig the ground deeply, taking out a double spit of soil about 2 feet square for each plant. Break up the subsoil and return to the space a mixture of equal parts of good loam of a turfy character, leaf mould, decayed hotbed manure, and coarse sharp sand. Introduce this compost, making it firm, and plant during April. Spread out the roots as far as possible, covering them carefully with fine soil, and distribute them well in preference to bundling them together. All the varieties will be best pruned rather closely after planting in order that vigorous growth may be produced.—E. D. S.



Burford Lodge.

THERE is probably no collection of Orchids in the whole world more celebrated than the one that has been brought together by Sir Trevor Lawrence, Bart., the well known President of the Royal Horticultural Society. As one of the keenest of amateur enthusiasts, Sir Trevor has spared nothing that would tend to make the stock representative of the entire Orchid family. His powers of appreciation are obviously much more highly developed than is the case with many people, for he can find delight in examining some minute member of the floral kingdom which the ordinary observer would pass without a glance. Thus it is that during the past quarter of a century, or perhaps more, the collection has been growing steadily in what are generally designated botanical curiosities, until at the present moment it is one of the most complete that is known. But Sir Trevor Lawrence carries his interest in the Orchids further than in expressing admiration for flowers, small and large; he makes himself familiar with their names, habitats, parentage, and in fact becomes thoroughly conversant with them all. This must all of course tend to increase his interest in his stock, and the Burford Lodge collection as a natural consequence continues to increase in variety and extent.

It is unquestionably very fortunate for the ordinary visitor that this gentleman does not limit his admiration to the dwarfs amongst these aristocrats of the world of flowers, but includes other kinds of more decided beauty. As a matter of fact it is apparently the aim to have examples of every Orchid that, having been brought into the country, can be got to Dorking alive and be made there to grow and flower. House after house is completely filled; the central and side stages positively groan beneath their burdens, while the roof rafters are well nigh obscured by the number of pots, pans, baskets, rafts, sections of trees, and other things that hang from them, and every one of which contains an Orchid. In one place you see a basket about 4 feet in diameter containing the pure white form of *Cœlogyne cristata*, and in another a pot of the size of a thimble, in the centre of which is a plant about a quarter of an inch high that some day may, or may not, rouse the English Orchid world to ecstatic enthusiasm.

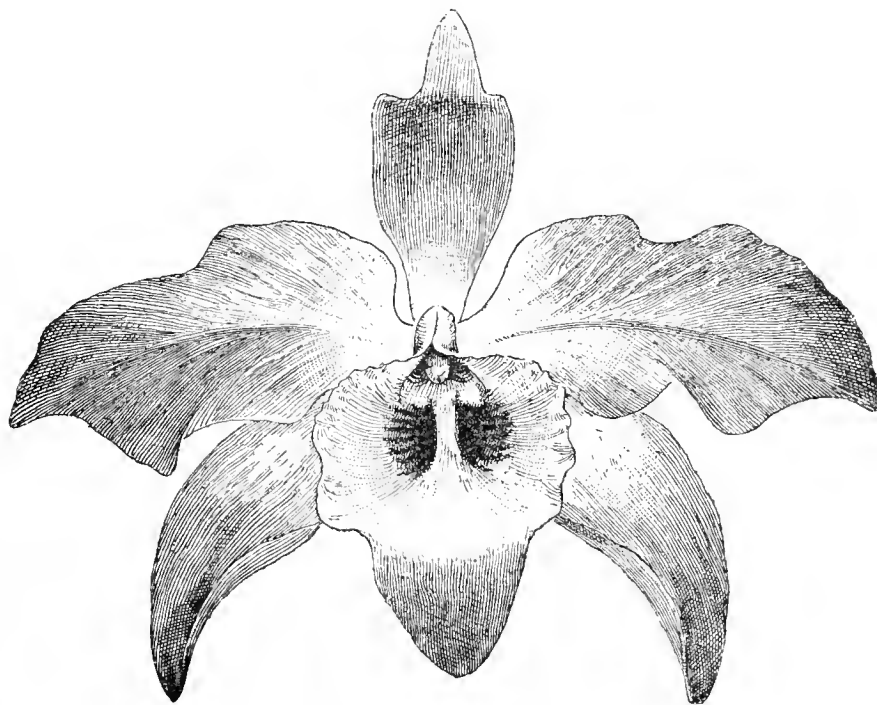
A few days ago I had the pleasure of paying my second visit to Burford Lodge, and under the guidance of Mr. W. H. White, the Orchid grower, looked through the several structures. Some were full of beauty in the form of flowers, and others in growth and leaves alone, and it is no easy matter to decide where to make a start, as the latter, if we take excellence of health as a starting point, were quite equal to the former. However, it is not to be supposed that hundreds will be named, so we can refer to them as they were found, irrespective of whether they were carrying flowers or not. Before actually naming any particular plant it will not be out of place to pay a tribute to the cleanliness that prevails throughout the houses. Everything that can be washed or scrubbed is evidently done, with the result that pots, pans, stages, floors, and other surfaces are scrupulously clean. This must exercise a beneficial influence on the health of the plants, and certainly the appearance of the plants is improved by the condition of their receptacles. The leaves, too, are in the best state, and this close attention to a very elementary detail accounts to a certain extent for the results that are achieved.

Let us at the outset glance at the *Dendrobiums*. The major portion of these are accommodated on the side stage of a large span-roofed structure, and the effect produced by the massed plant is beautiful. There is an imposing stock, but the results are gained not so much by numbers as by individual excellence of the plants, many of which are perfect examples of what a well-grown *Dendrobium* should be. The plants are the picture of health, and the number of flowers carried by some of them is little short of remarkable. Charming little specimens in 6-inch pots are producing about a hundred flowers, and those of dwarfer habit would make simply ideal plants for use on the table. There are, of course, many *Dendrobiums* in other houses, but these are of different type, and call for other treatment from that meted out to those under notice. Mr. White ascribes his success in a large degree to judicious watering, scarcely any being given to the plants during the winter. Occasionally a supply may be deemed imperative, and it is then given just within the rim of the pot, and never in the centre, as is commonly the case.

In passing slowly through the *Dendrobium* house a few names were jotted down, the most attractive, from some particular aspect, being chosen. One so distinguished was *Burberryanum* (fig. 64), which was honoured with an award of merit from the Royal Horti-

cultural Society on March 13th. Seeing it at the Drill Hall and at Burford Lodge are two very different things, for at home the striking beauty of the flowers is fully appreciated. The red, or perhaps very brilliant rose, describes the colour better, of all the organs, and the excellent form of the flowers were sufficient warrant for the recognition given by the Orchid Committee. *D. Burberryanum* was raised in the collection of the Right Hon. Joseph Chamberlain, Highbury, from a cross between *D. Findleyanum* and *D. Dominianum*, and in 1897 a small piece was presented to Sir Trevor Lawrence, which is now flowering for the first time. Amidst a collection of superb forms this hybrid makes its presence felt by the intensity of the colour of its flowers.

There are many forms of the attractive *melanodiscus* at Burford Lodge—some superior to others no doubt, but every one quite worthy of its place. One example of this *Dendrobe* in a 32-pot carried 106 perfect flowers, and this knowledge will convey to readers an excellent idea of its beauty. Another variable plant is *D. splendidissimum grandiflorum*, of which the type stands head and shoulders above its fellows in colour, size, and substance of the flowers. The colour in the throat of *D. nobile Amesiae* is marvellously deep, and runs quite through the flower; while in the Burford Lodge variety of the same popular Orchid we find a peculiar streak of colour down the petals, that gives the flower a very distinct character. Of softer beauty is *nobile Ballianum*, and in *nobile Tollianum* may be found one of the curiosities of form. The plum-coloured throat of *The Pearl*, hybrid of which the parentage is unknown, is unique, and is

FIG. 64.—*DENDROBIUM BURBERRYANUM*.

beautifully set off by the delicacy of the prevailing colour of the flowers. Two really exquisite *Dendrobiums* are *Luna* and *pallens* (fig. 65), both of which are of fine form and very floriferous. In each case the colours are very soft, as the varietal names imply. A few more included in either this or other structures, *tortile*, *senile*, *Hilli*, *Treacherianum*, *Rolfæ*, *xantholeucum*, *Clio*, *signatum*, *Cassiope*, *aureum*, *Jerdonianum*, and *Kingianum*.

Burford Lodge has a great reputation for its *Masdevallias*, of which there is a magnificent collection. On the occasion of a previous visit exceptionally large plants were fairly numerous, but these it was learned have been presented by Sir Trevor to Kew. Their loss does not mar the excellence of the collection in its range of species, hybrids, and varieties, and its interest is practically perpetual, as there is always something in flower. All the plants are in excellent health, and prove conclusively how they appreciate the attention accorded to them. Equally satisfactory in their way are the *Aërides* and *Saccolabiums*, though this is not the best season at which to see them. In the same structure as these the curious *Angraecum pertusum* was flowering profusely, as was *Spathoglottis Lobbi*, whose flowers are carried on such slender stems that one is surprised they will bear their delightful burden. *Chysis Chelsoni* with its handsome flowers was conspicuous, while a small plant of the white *Dendrobium nobile* called for attention.

One half of the large span-roofed house in which the *Dendrobiums* are luxuriating is occupied with various Orchids, amongst which was a grand specimen of *Vanda Sanderiana* on a large raft. A curious fact relative to this plant was mentioned by Mr. White. It appears that some time ago, when the plant occupied a different and less accessible position from that at present assigned to it, a quantity of green growth was observed amongst the roots. On the occasion of one

of his frequent visits, however, Sir Trevor also noted the fact; and, not content with a distant view, mounted the steps and stage for a closer inspection, which revealed the fact that the growths which had been taken for moss were really small plants. At least two of these remain on the roots, and the remainder have been placed in small pots to grow. Whence these seedlings came, and what the plants will prove to be, are equally unknown, but the latter will, it is hoped, be elucidated in the future. *Vanda coerulea* is flowering in another position in the same structure, while the handsome *V. coerulea* finds an apparently congenial place in another house, where it is hoped it will flower freely. The green-leaved *Phalaenopsis* grow apace, one plant having made eight leaves during the past twelve months; the marbled-leaved types also look wonderfully well. There are hundreds of other plants in this house alone.

Occupying a position in front of an immense basket of the pure white form of *Coelogyne cristata* are some plants of *Laelia harpophylla*, and the combination of colour is peculiarly pleasing. *Laelia Cowani* is also close by, as are *Lewisias*, though the latter are not in flower. Proceeding, we find numbers of *Epidendrums* in various places, including *radicans*, *Endresii*, *elegantulum*, *Endresii-Wallisi*, *xanthinum*, and others, besides *Vanilla Wightii* in flower, and *Maxillaria leptosepala*, *Promeneia citrina*, *Angraecum eburneum*, *Cymbidiums*, *Cattleyas*, and *Odontoglossums*. So one might go on naming plant after plant, until long ere finis could be written several pages of the *Journal of Horticulture* would be covered. There are the plants and there it is hoped they will remain and continue in the same excellent health that characterises the majority of them at present, despite the fact that Box Hill frowns above and deprives the garden and its occupants of much light and air.—ORACHE.

Dendrobiums at Woodhatch, Reigate.

I SAW a really wonderful show of these beautiful Orchids in flower a short time ago at the above place. Mr. Haywood had probably just then one of the finest displays of Dendrobiums to be seen anywhere, some 300 being in bloom, of which not less than 200 were seedlings, raised by Mr. Salter a few years since, from several crosses. But apart from their being such, there was great interest attached to their splendid condition.

This first set of seedlings were between four and five years old, and were all in 32 and 24-sized pots, with the exception of a noble plant of the variety "Virgil," of which form there are many, and which was in an 8-inch pot, carrying several fine spikes. Growth of the latest production ranged from 20 to 40 inches in height, and were proportionally stout. Possibly being so far maiden plants they have in them greater robustness than propagated ones have, but that is not certain. In any case the culture is of the very best. The plants have ample light and air, and are kept rather cool than warm. The houses, for they occupied three in one long lean-to range, are scrupulously clean and comparatively dry. No stimulants are used, and the sole rooting medium is sphagnum moss, with a few crocks.

It was difficult to look upon such an unusual sight of *Dendrobium* florescence without a pang, on hearing that large numbers of these plants would be offered for sale by Protheroe & Morris on the 16th inst. The present collection has come from *Ainsworthi* × *nobile* roseum, which has produced the beautiful white "Virgil" strain; *heterocarpum* × *splendidissimum*, and *Ainsworthi* × *heterocarpum*. Some specially fine forms will not be parted with at present. Another stock of seedlings yet in small pots has been raised by crossing other and possibly choicer varieties. Mr. Salter's success has been remarkable, and if he worked on a liberal scale could soon make *Dendrobium* plants for the million. But orchidists do not want that to occur.—A. D.

In Cheapside.

WERE it not for the fact that the great horticultural auctioneering firm of Protheroe & Morris has its headquarters there, people would hardly look for Orchids in Cheapside. The result of this location, however, is that at various times many valuable Orchids come and go; in fact, some of the most important Orchid sales in the world take place there. Naturally enough, these vary in extent and importance, but there is usually something of interest at every weekly meeting. There are those among Orchid enthusiasts who set Friday entirely apart, so that they may not be debarred from attendance at Cheapside. They may not always be buyers, but their interest is so keen that they must go, and if they do not enter into the bidding, derive satisfaction from knowing who does. Some of the *habitués* buy for their own collections, while others accept the work on commission, and amongst them may be found men whose knowledge of the commercial value of Orchids cannot be surpassed, and probably is unrivalled.

On Friday, March 16th, many exceptionally important lots were to come under the hammer, and we made our way to Cheapside as spectators of men and manners. The sale room was a veritable paradise of *Dendrobiums* from Surrey, *Phaius* from the Tyne, *Odontoglossums*

from Belgium, *Cattleyas* and *Laelio-Cattleyas* from France, and hundreds of others from various quarters. Buyers, too, were numerous, and while they were apathetic enough when plants of mediocre merit—in the eyes of experts—were to the fore, they were wonderfully keen in scenting out anything above the ordinary. The nods and winks, of which the bidding appeared mainly to consist, were then rapid—at least this was the conclusion arrived at from the celerity with which the presiding genius ran up the scale of figures. For one *Dendrobium* a bidder calmly offered 8s., and retired from active participation when 15s. was reached; the plant was eventually knocked down at 4½ guineas. It was not much to look at, but the experts, in everyday parlance, "knew something."

Amongst the conspicuous lots were a splendid specimen of *Eulophiella Peetersii*, which a buyer was fortunate enough to secure for 20 guineas; the chastely beautiful *Dendrobium nobile Virginalis*, carrying about two dozen flowers, which remained unsold at 74 guineas; a hybrid *Odontoglossum* which fetched 20 guineas, and *O. Loochristiense*, 24 guineas. A plant in sheath of *Laelio-Cattleya Digbyana-Mendeli* (*Imperatrice de Russie*), from Mons. Ch. Maron, reached 90 guineas and remained unsold, as the reserve was 100 guineas, but it was said, subsequently changed hands at 50 guineas, at which figure it was secured for Lord Rothschild, who was indeed, by proxy, a large buyer. *Laelio-Cattleya Ernesti*, carrying three flowers, fetched 32 guineas, as also did *L.-C. Lucasiana*. *L.-C. Captain Percy Scott* and *L.-C. Minerva* brought 20 guineas and 15 guineas respectively, and *L.-C. Edouard André* 28 guineas, these being some of the heaviest prices. A number of plants of *Odontoglossum crispum*, *Pacho* type, in splendid condition, from Mons. Florent Claes, ranged between 10s. and 15s. apiece and sold rapidly. With a few exceptions the well grown seedling *Dendrobiums* did not realise high prices, partly because several were not of superlative merit, and partly because they were so numerous. As an example of the fluctuation it may be said that one set of three realised £3 15s., and another set only 6s. Some of the plants of *D. Virgil* went well, as did the Woodhatch Lodge variety of *D. Ainsworthii*, while *D. Ballianum* fetched 7½ guineas.

And so we might proceed naming price after price, but space forbids. There were quality and quantity both largely represented, and the interest in the sale was excellently maintained. The proceedings were quiet as a rule, but an occasional flash of humour helped the Orchids in brightening the sale room and its occupants.

A Great Specialist.

THE late Mr. Edward Joseph Lowe, whose death was recorded last week, was a specialist of an exceptional character, and besides his numerous personal friends, all Fern lovers and students will unite in sincere regret at the loss we have sustained. As a cultivator and collector of the varied forms of British Ferns he was indefatigable and successful, but beyond this he was a philosophical and scientific experimentalist and investigator of rare patience and persistence. Of the numerous works Mr. Lowe had written the most recent was perhaps the most interesting—namely, "Fern Growing, Fifty Years' Experience in Crossing and Cultivation." In this book he detailed his experiments in hybridising and crossing Ferns, and sets forth reasons and facts in support of multiple parentage, which have attracted wide attention, though all pteridologists do not agree in the conclusions at which he arrived.

The other works on Ferns which we owe to his pen are entitled "Our Native Ferns," "British and Exotic Ferns," "New and Rare Ferns," and "British Ferns, and Where Found." Some of these are finely illustrated by coloured plates, and constitute a library of Fern lore, unrivalled as the work of one man. Other works of horticultural interest which Mr. Lowe produced at intervals are "British Grasses" and "Beautiful Leaved Plants."

As one of the founders of the Royal Meteorological Society in 1850, Mr. Lowe did further good service; he devoted much time for many years to meteorological work, and he was the author of several treatises on weather observations and phenomena. In addition to being a Fellow of many scientific societies, he had received some well-merited honours in recognition of his biological work. He was elected a Fellow of the Royal Society in 1867, and an honorary life Fellow of the Royal Horticultural Society in 1872, the year in which he acted as honorary secretary at the Nottingham meeting. At the Nottingham meeting of the British Association in 1866 he was also appointed honorary secretary.

Mr. Lowe was born at Highfield House, Nottinghamshire, on November 11th, 1825, and removed to Shirenewton Hall, Monmouthshire, in 1880, where he continued the studies which gained him so much fame in Nottinghamshire. He was essentially a true naturalist, and, apart from his botanical investigations, he was much interested in Conchoology, while amongst the numerous achievements chronicled in one of his works he claims to have been the "discoverer of a new British worm."—R. L. C.

Notes on Winter Apples.

THE stock of sound dessert and culinary Apples is in many gardens very low at the present time. This is not brought about by any deficiency of varieties that will keep until this period, but is rather the result in some instances of the crops being light from the visitation of spring frosts last year, and again, that in many gardens

Grafting is the quickest means of transforming early or midseason into late fruiting sorts, and it is just as desirable to purchase grafts from the nursery as trees when transformation is the object in view. Much more could be done than is at present effected by grafting, but the gardener in charge is not always allowed to exercise his own discretion in thus dealing with the established stock. A wide selection of varieties for late use is neither available nor necessary. By available, is meant in ordinary cases or in small private gardens. Messrs. Bunyard & Co., from their thatched fruit room at Maidstone, can



FIG. 65.—DENDROBIUM PALLEUS. (See page 239.)

too few late ones are planted.* It is no uncommon experience to find in gardens an over-abundant supply of autumn and early winter Apples, but less thought is given to the useful late ones in planting. Nor is it always an easy matter for a gardener to make radical changes in this respect, involving as it would the loss of fruit for consumption at some period of the season, whether replanting or grafting is adopted. When a garden is furnished with good-sized trees, neither gardener nor owner cares to see them removed, and their places occupied with young trees which require some years to attain to a profitable size.

easily retain the midwinter sorts for spring use; this, of course is an exceptional case that is not in many instances within the means of the private gardener to imitate. Messrs. Bunyard's exhibits in the spring months are most remarkable, and have puzzled many in the freshness of the out-of-season varieties that are shown.

In former times, and even now, there existed a desire to make the collection of fruit trees as exhaustive in variety as possible; certainly this could not have been because it is necessary for maintaining a supply for cooking or dessert. This latter is rendered infinitely easier

when there are larger stocks of individual and trusted varieties than from smaller gatherings of greater range. For cooking purposes this is even more true than when applied to dessert Apples. Variety in the daily dessert is always more or less welcome, but in cooking it is not so when the best for the particular purpose is on supply. It is quite unnecessary to particularise those which in ordinary cases are out of season, but mention might be made of a few that are still fresh and indispensable.

Though small, the old Cackle's Pippin is an invaluable dessert Apple for present use; ordinary samples possess no particular external beauty, but its crispness, clear-coloured flesh, and delicate flavour combine to make it a favourite with those who are so fortunate as to possess a supply. Mannington's Pearmain is another good Apple that ought to be freely grown; its habit makes it especially suitable for garden culture in bush form. Ribston Pearmain is not often met with, but is a splendid keeper, and has a fine appearance as well as flavour to recommend it. Court Pendu Plat is good, though not equal to the last named in quality, but it has the rare merit of flowering after many others are over, and thus escapes the destruction of its flowers by frost.

Cobham still retains its freshness, as also does Newtown Pippin. Claygate Pearmain has furnished beautiful samples from Christmas until now. When well coloured, this is an ideal winter dessert Apple, the appearance, size, and quality being all that can be desired, as is also the character of the trees' growth. Sturmer Pippin has been so often praised that more need not be given here. Reinette du Canada, too, if carefully harvested, is good for both dessert and cooking purposes. Gathered too soon, however, it is easily spoilt through shrivelling. Allowed to hang on the trees as long as it is safe, the fruit lasts well into the spring months.

In the matter of cooking Apples, much depends on the trees, soil, and fruit store whether they keep satisfactorily, this applying even to those that are reputed late. From old trees that are deeply rooted large fruits do not keep well; indeed, by midwinter many become spotted, a direct indication of a short season of usefulness. Young trees with their roots near the surface produce clean and better keeping fruit. Some soils, notably those with a cold, clayey subsoil, are not good for producing late Apples, unless the roots are kept near the surface by periodical lifting or root-pruning. Lane's Prince Albert, Wellington, Northern Greening, Norfolk Beauty, and Easter Pippin are good late cooking Apples. Norfolk Stone Pippin is a regular bearing variety, and though not of high quality, or large in size, is valuable, because it rarely fails to bear. There is no other that can be so well depended on in these gardens to produce a crop, and more often a heavy than a light one.

Size of dessert Apples has often been a debatable question, though, generally speaking, it yet remains unsettled, for there are few who admit the necessity of large Apples for the purpose, or appreciate them at the table. Though this is true as affecting the dining-room, the case is often different when visits are paid to the fruit room. Large Apples or Pears are commonly chosen if it be of good appearance, in preference to a smaller one. In this case there is freedom from formal etiquette, and if a large Apple proves too much, it can be thrown aside when the appetite is appeased without further thought. Nor is quality in such cases so strictly essential—indeed, one with a showy complexion is more tempting than a really good quality fruit unpossessed of skin beauty. I had ample testimony during the past winter bearing on this particular subject. Cox's, Ribstons, Blenheim, Claygates, and other high quality sorts were passed over in the fruit room for Heavy Morning, which in appearance is simply perfection—that is when it is in its best form. Mr. Banyard considers the quality so indifferent, that although he has it in stock, he does not include it in his catalogue.

Although quality should be made the first essential, I think I have advanced sufficient to show that high flavour, when concealed beneath an unattractive skin, is not so appreciated as it should be; and it is only another case of the grower and consumer being slightly in conflict. There are certainly two classes of consumers—one that will prize quality at all costs; the other is beguiled by handsome appearance more than by flavour. This is not only true of Apples, but of nearly all other fruits as well; and the same principle applies to other comestibles. Who, for instance, among purchasers would pick out all the small eggs out of the basket, because they were of better value than the larger? and how often does one hear the remark that the brown-shelled are richer than the white?

There is no doubt that colour in Apples can be improved by treatment of the trees, both in summer and winter. The produce from trees allowed to become densely crowded can bear no comparison with fruits from branches so disposed that the sun can readily reach the fruit. Summer pruning in trees sufficiently vigorous as to require it makes a considerable difference to the matured fruit, so much so, indeed, that in extreme cases I have known Apples to be almost entirely unrecognisable. Root-pruning has a wonderful influence on

the colour of Apples; big thong-like roots, penetrating deeply into the sub-soil, are not productive of this desirable feature—at any rate in garden trees; and their existence certainly adds to the labour of summer and winter pruning of the branches.—W. S., *Rood Ashton*.

Hardy Annuals.

As a general rule these require to be sown where they are intended to bloom. Very early sowing should be avoided, for nothing is gained by doing so, but, on the contrary, a very indifferent display will be the result. Early in spring the ground is cold and often wet, and these conditions combined sometimes destroy vitality, and under such circumstances the germination of the seeds committed to the soil is always slow. It may happen that mild fine weather prevails in spring; and when the gardener takes advantage of this to sow the various kinds of hardy annuals early, the seeds of some come up in a few days, but others remain in the ground a long time, and in many cases do not germinate at all. All seeds require a certain degree of heat to germinate; below that point they will not do so, but when placed in contact with moisture the same chemical process takes place within the seed, from the absorption of water, as if the seed were being transformed into a plant. When the chemical elements of a seed are thus changed, without growth or germination taking place, its vitality is gone; hence the importance of keeping seeds dry whilst in a temperature unsuited to their germination.

The middle of April I have found to be a good time for sowing hardy annuals. The temperature of the ground is then raised considerably by the sun's rays, and there is less probability of the soil being saturated with moisture, or the seeds receiving a check through snow, frosty weather, or cold drenching rains. From the middle of April to the first week in May I consider the most advisable time of sowing, and if possible a moist period just succeeding dry weather should be chosen. When the air is dry seeds of all kinds do not germinate so well as in moist cloudy weather. If it were possible to know exactly when rain would fall after dry weather it would be well to sow the day before; for it is all the better to put in seeds when the ground can be worked without making it into mud, as such a condition is unquestionably prejudicial to the success of any kind of seeds.

New seeds of all kinds are preferable to old for certainty of growth, for producing a stronger plant and a larger amount of flower, and new seed of all hardy annuals is decidedly preferable to old. It germinates sooner and with greater certainty; the plants are stronger, will bear more hardships, and produce finer flowers and in greater profusion.

The next point to be attended to in the cultivation of annuals is to have the soil in a condition suitable for the germination of seeds and the healthy development of the plants. How often do we see the borders only dug a few days before the seeds are sown, without any attention being paid to having the soil well pulverised, so that it will in the spring fall like so much flour after a shower of rain? The soil where annuals are intended to be grown should be dug deeply in the autumn, and left rather rough, so that air and frost may readily act upon it. A dressing of leaf mould dug in in the autumn is very beneficial. If the ground is at all heavy it will be much improved by forking it over on dry frosty mornings. This may be considered troublesome, but it is only what all plants require in order to grow well, and annuals are either worth growing well or not at all.

Just forking over borders in front of shrubs, and sowing annuals there without any further attention, is one of the best means of making them poor. They may grow and do well whilst young, and their wants small, but when these increase the soil is too firm for the roots to penetrate to any depth, or if they do the ground is already occupied by the roots of the shrubs, and very little food indeed remains for the annuals. I have heard them termed weeds, which they undoubtedly are as often cultivated; but bestow upon them the care necessary for their proper development, and they will in their season be found inferior to no bedding plant receiving double the amount of attention and expenditure.

In sowing the surface should be well pulverised with the rake, and a little of the soil drawn to two points, so as to leave a space of the size required for the patch, which should not be more than 1 foot or less than 6 inches across, and the patches should not be closer together than 1 foot in any direction. The seeds are best sown thinly in the centre of the patch, and more thickly round the edges.—PRACTICE.

(To be continued.)

NOTES & NOTICES

Recent Weather in London.—The weather of the past few days has been peculiarly varied. On Saturday we had snow both in the morning and evening, with sufficient frost to cover ponds with a thin sheet of ice. Sunday morning was fine, but the evening brought snow and heavy rain. On Monday morning the ground was thinly covered with snow, which did not remain long; in the evening there was torrential rain. Tuesday was brilliantly fine and spring-like, the sun being quite warm. At the time of going to press on Wednesday it was bright and pleasant.

Weather in the North.—In the earlier part of the week ending the 19th inst., high and cold westerly winds prevailed. Frost set in on the evening of the 15th, and 3°, 8°, 10° were recorded on the following mornings. Snow has again fallen heavily in several parts of the county, and a continuous onset for some hours on Monday forenoon covered the ground to nearly 3 inches. This, in great part, disappeared by the evening.—B. D., *S. Perthshire*.

Royal Horticultural Society.—The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, March 27th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. Geo. Henslow, M.A., at three o'clock.

New Agricultural College.—Recently there has been keen excitement about the gentry, with the Most Rev. Dr. Brownrigg, Bishop of Ossory, as chairman, who are taking the necessary preliminary steps to have the disused workhouse at Donoughmore converted into an agricultural college. The committee is an influential one, whilst the workhouse is eminently suitable for the purpose in view. The college is to be for the following counties—Kings and Queens, Tipperary, North and South Ridings, Kilkenny, Barlow, and Kildare. At the last meeting of the committee a resolution was adopted, and was directed to the heads of the Department of Agricultural and Technical Instruction, pointing out the great facilities which exist at Donoughmore for the establishment of an agricultural college.—A. O. N.

Elementary Education.—At a meeting of the Executive Committee of the Agricultural Education Committee, held at 10, Queen Anne's Gate, Westminster, S.W., on Tuesday, the 13th March, it was moved by Sir Wm. Hart Dyke, Bart., M.P., and seconded by Mr. A. C. Humphreys Owen, M.P., and carried unanimously, "That this committee hails with the greatest satisfaction the provisions of the new Day School Code adopting the system of 'block grants,' extending lessons on 'common things' to the higher standards, and requiring the course of instruction to be suitable to the circumstances of the children and the neighbourhood. They attach great importance to the new course of 'household management' prescribed for girls. Generally, they regard the alterations made this year as likely to prove most beneficial to country children, teachers, and school managers, and they trust that the Department may see their way to make corresponding changes in the forthcoming code for evening continuation schools."

National Diploma in Agriculture.—The Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland have joined forces in the establishment of an examination in the science and practice of agriculture, to take the place of the separate examinations which have heretofore been held by the two societies independently. Candidates who pass this examination, which is under the management of the National Agricultural Examination Board, appointed by the two societies, are to receive the national diploma in agriculture. Those who obtain not less than a certain percentage of the maximum number of marks in each of the subjects will receive the diploma with honours, a gold medal being awarded to the candidate who is highest on the honours list. It has been arranged that the first examination for the diploma shall be held in the great hall of the Yorkshire College, Leeds, on Monday, April 30th, and five following days. Applications to be allowed to sit at this examination must be made not later than Saturday, the 31st inst.

Petersham Common.—Many readers will be glad to know that Petersham Common will very shortly come under the Metropolitan Commons Acts. The Board of Agriculture last year certified a scheme for the establishment of a local management with respect to the common, but such a scheme has not of itself any operation until it shall have been confirmed by Parliament, with or without modification. The confirming bill has now been introduced, and will, no doubt, have an easy and rapid passage through both houses.

Anatomy of Light.—At the Royal Institution, Lord Rayleigh, on Friday, continued his lecture on "Polarised Light." Full of the keenest insight into the facts connected with the phenomena, and aided by exceptionally successful experiments, the scientist unfolded the subject, showing at every point Nature's wonderful laws in relation to the phenomena—crystalline properties of light, and, notably, laws of colour based on the triangle of colours as expounded by Newton. The screen diagrams demonstrating all this, constituted a series of beautiful pictures.

Gardening Appointments.—Mr. G. Stotesbury, late head gardener to George Pim, Esq., Brennanstown, Cabinteely, has been appointed to a similar position in the gardens of Colonel Smyth, Gaybrook, Mullingar; Mr. W. Usher, general foreman, succeeds Mr. Stotesbury. Mr. W. McClatchie, for the past three years head gardener to Sir Ralph Cusack, Furry Park, Raheny, has been appointed head gardener to the Right Hon. Sir David Harrel, Under-Secretary's Lodge, Phoenix Park, Dublin. Mr. George Reid, for a number of years foreman in Kirklees Park Gardens, Brighouse, succeeds Mr. Herbert as head gardener to Miss Trevor, the Mount, Littlethorpe, Ripon.

St. Valentine's Day in Boston.—Valentine's Day in Boston, U.S.A., has always been a busy and profitable occasion for the florist. February 13th and 14th are equally busy with the wholesalers, the out of town trade buying briskly on the earlier date for demands of the 14th. Small flowers sell best, Violets leading everything else, but the demand really covers everything in the flower line and applies to all grades of the business. Flowers for Valentine gifts are sent almost invariably in boxes, a fancy card or valentine being laid on top of the flowers, and there is little or nothing done in the way of special design work or decoration. Last year was a most unfortunate one for the valentine trade, as the big blizzard struck in the day before, and, everything being blocked, people who wanted Violets had to go without, and the dealers missed the benefit of the much-needed business in the worst coal-eating season they had seen for many years.

Death of Mrs. Lawrenson.—With regret, that all who knew her will share, I have to announce the death of Mrs. Lawrenson, which took place at her residence, Salerno, Killiney, Co. Dublin, on the 14th inst. Better known, perhaps, under the *nom de plume* of "St. Brigid," her labours of love in the gardening world, which are inseparably associated with that fine strain of Anemones, may yet show further developments of her loving care and enthusiasm in other directions. Since leaving Howth—where she was laid to rest on St. Patrick's Day—to reside on the western shores of Dublin Bay, Hellebores and Narcissi had, among other things, claimed her attention. Of the former particularly this estimable lady was very hopeful and proud of a numerous progeny she had raised. These, we venture to hope, will fall into good hands now that Salerno—that lovely spot overlooking sea and mountain—knows its gentle mistress no more.—K., *Dublin*.

Gardeners' Charity Guild.—It is not every gardener in the United Kingdom who is aware that there is a "Gardeners' Charity Guild," or that this association has inaugurated concerts in aid of the gardening charities. Such, however, are bare facts, substantiated by the fact that last year the concert was the medium by which upwards of £30 was handed to the Royal Gardeners' Orphan Fund. This season, in order to continue the excellent work that has been begun, a concert was arranged for the evening of Wednesday, March 14th, at the Cannon Street Hotel, when N. N. Sherwood, Esq., occupied the chair. The great hall was well filled with people, who were in high good humour, and bent upon enjoyment. An admirable programme had been arranged, and the items therein were heartily received. The committee and Mr. T. Swales (hon. secretary) are to be congratulated on the result of their efforts. We have not yet learned to what extent the funds of the Gardeners' Royal Benevolent Institution have benefitted, but trust it will be a good round sum. Of this, we are informed, the honorary secretary will send particulars at an early date.

Royal Horticultural Society.—The Rev. W. Wilks writes: "On behalf of the Council of the Royal Horticultural Society, and in order to allay the anxiety that may be felt by the Fellows, I shall be obliged if you will publish the following statement:—The general meeting of the Society, held on the 13th ult., having unanimously adopted the proposal of the Council to celebrate the centenary of the Society by the removal of the Society's Gardens from Chiswick to some spot where the atmosphere is less charged with smoke, the Council have inspected several proposed sites, and have at least one still left to investigate. The business is not one which can be hurriedly done. As soon as all the suggested sites have been properly considered by the Council, a definite proposal will be duly submitted to the Fellows."

Horticultural Club.—The usual monthly dinner and conversazione took place on Tuesday last, the 13th inst. The chair was occupied by Rev. W. Wilks, and amongst those present were Messrs. Gofton, H. Salmond, George Bunyard, Alfred Rivers, Pinches, Selfe Leonard, and George Paul. The paper after dinner was on the hardiness of Tea Roses; it was read by Mr. Geo. Paul, V.M.H., whose long experience in the growing of this beautiful section enables him to speak with a good deal of authority. An interesting discussion (in which many of the members joined) followed the reading of the paper, and a cordial vote of thanks was given to Mr. Paul. The question has been a good deal before the public lately, and it is hoped that Mr. Paul's paper will appear in the "Rosarian's Year Book" for 1901.

Wolverhampton Horticultural Club.—At the recent monthly meeting, Mr. J. F. Simpson in the chair, Mr. W. Gardiner, Harborne, Birmingham, read before a large attendance of members letters from South Africa, descriptive of the geography of that colony, with interesting details of the ornamental trees, shrubs, and flowers. Mr. Gardiner prefaced the reading with a brief allusion to the chief genera of the flora, especially of Cape Colony, and to which we are so much indebted for the embellishment of our greenhouses and gardens.

Royal Caledonian Horticultural Society.—Amongst Scottish societies this occupies a very prominent position, and its shows in the Waverley Market are looked forward to by exhibitors and others both north and south of the Tweed. This year the spring show will take place on April 4th and 5th, and the autumn meeting on September 12th and 13th. These are the two principal events, but two smaller shows come in May and July. The September exhibition is the more important, and includes classes to the number of about 260 for practically every conceivable crop; at the spring show there are 136 classes. The secretary is Mr. P. Murray Thomson, 5, York Place, Edinburgh, from whom particulars and schedules may be obtained.

Birmingham Gardeners' Association.—At a recent fortnightly meeting, Mr. H. A. Burberry (late orchidist to the Right Hon. Joseph Chamberlain, Highbury), in the presence of a good attendance of the members, read an excellent paper on the history and culture of *Odontoglossum crispum* and its varieties. An animated discussion followed, in which there was a certain degree of opposition to the theory and practice advocated. Mr. W. B. Latham (curator of the Botanical Gardens, Edgbaston), the chairman, in adverting to the hygrometrical conditions pertaining to the culture of Orchids in general, advocated a very spare use of the syringe over the foliage of the plants, preferring the requisite moisture to be afforded atmospherically by syringing the walls and paths. The ailment commonly known as "the spot," was discussed, and was attributed to a low and over-moist temperature.

Chester Paxton Society.—One of the best attended meetings of the session was held in the Grosvenor Museum on Saturday, when Mr. D. A. Cowan of Gateacre Nurseries, Liverpool, delivered a lecture entitled, "Reminiscences of my Travels Collecting Orchids in South America," which was illustrated by a collection of South American snakes, butterflies, as well as several birds of exquisite plumage. In addition to these, added interest was given to the lecture by a collection of implements and dresses essential for the use of the explorer in search of orchidaceous plants in foreign countries. An interesting discussion followed, in which the chairman (Mr. John Taylor), Mr. Newstead, and Mr. Miln took part. Mr. N. F. Barnes, in proposing a vote of thanks to the lecturer, mentioned that Mr. Cowan and those associated with him in his business had perhaps done more to popularise the cultivation of Orchids in this country than anyone else. This was seconded by Mr. Robert Wakefield, president of the society, who expressed a hope that the Paxtonians might at some future time have the pleasure of another lecture from Mr. Cowan.

National Dahlia Society.—The annual report for 1899, list of members, and the schedule for the forthcoming show (all under one cover), to be held at the Crystal Palace on September 7th and 8th, have reached us from the hon. secretary, Mr. J. F. Hudson, M.A., The Gardens, Gunnersbury House, Acton. There are many classes that come year after year in the same form; but a few fresh ones have been embodied, which it is hoped will increase the interest and beauty of the exhibition. Several of these stipulate for the addition of Dahlia foliage, while in another case a silver cup is offered for nine Dahlias, distinct varieties, in pots not exceeding 10 inches in diameter. This prize is offered by F. W. Fellowes, Esq. Then we find the sum of £6 allocated to a class for Cactus Dahlias, twelve varieties, six blooms of each, to be arranged with any suitable foliage in vases, which will be provided by the society. The stems may be stiffened with wires, but no wire frames may be used. The quality of the blooms will be the first consideration with the judges. In addition to the classes scheduled, a new one has to be formed for Fancy Dahlias, for which 2 guineas are offered by the Duchess of Sutherland, who is a patroness of the Society.

Shropshire Horticultural Society.—There is no provincial society in the country whose schedule is more eagerly anticipated than that of the Shrewsbury Floral Fête, which will this year take place on August 22nd and 23rd. The committee has made a reputation for inaugurating new classes, each of which is in its way an advance on its predecessors, and we need not remind our readers of the climax that was attained to last year, when £100 were offered in one class for Grapes. This does not appear this season. We have, however, the gold medal of the society and £25 as the premier award for twenty-four dishes of British grown fruits, the remaining three prizes being of the respective values of £20, £15, and £10. This will be judged by points, the standard values being given, as also are the fruits that may be chosen. Exhibitors are informed that the "highest cultural merit is sought, and that each dish will be judged by this standard." Special awards of £3, £2, and £1 are offered for decorative arrangements, irrespective of fruit. The prizes offered for fruits will be awarded strictly for fruit only. This should make a splendid class. To refer to all the others would be an impossibility, and intending exhibitors will do well to make early application to Messrs. Adnitt and Naunton, Shrewsbury, who fortunately continue to hold the post of honorary secretaries.

Weather in Dublin.—The advent of March has brought blessings in the form of days suitable for outdoor work, as the weather has been, on the whole, dry with occasional keen winds. The season will, however, be rather late owing to the exceptionally severe weather we have experienced. In many places the Potato planting has only just begun, and similarly with other vegetables.

Sunderland Weather.—Your correspondent "S. E.," on page 212, says "the winter has not perhaps been typical; frosts have not been frequent and severe." Such, however, has not been our experience. From November 1st to March 1st inclusive we have had seventy-six nights on which the thermometer has fallen to 32° or under, the lowest reading being 10°, while yesterday morning, March 28th, the minimum register was 7°.—C. PORTSMOUTH, *Herrington Hall, Sunderland.*

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
March.										
Sunday.. 11	E.N.E.	deg. 42.8	deg. 40.8	deg. 52.2	deg. 37.5	ins. —	deg. 41.3	deg. 42.2	deg. 43.9	deg. 29.2
Monday.. 12	N.N.W.	39.8	37.2	56.8	32.9	—	41.3	42.4	43.9	23.5
Tuesday 13	N.N.W.	45.9	42.3	46.5	36.6	—	42.1	42.8	43.9	26.5
Wed'sday 14	N.N.W.	44.3	41.7	52.4	31.9	—	40.7	42.6	43.9	22.3
Thursday 15	W.	46.3	42.5	49.3	42.2	0.06	42.4	43.1	43.9	38.5
Friday .. 16	W.N.W.	38.9	36.9	43.5	36.7	—	42.6	43.1	43.9	33.9
Saturday 17	W.N.W.	33.8	30.1	40.9	25.6	—	40.5	43.1	43.9	16.5
MEANS ..		41.7	38.4	48.8	34.8	Total 0.06	41.6	42.8	43.9	27.2

A dull cold week, with brief intervals of bright sunshine.



The New Chiswick.

It is possible to imagine what would have been the nature of the confusion worse confounded of opinion and desire in relation to the site of the new Chiswick, had the R.H.S. Council submitted the matter to a plebiscite of the Fellows. Happily we have been saved from that calamity, to which the confusion of tongues at the Babel Tower would have been a triviality. Whenever it is announced that a public site has been fixed upon and has been practically purchased no doubt there will be a tremendous outcry. But it is absolutely certain that the new Chiswick can be in one place only, and wherever it is there is not the least probability that it will be so convenient for all anxious to visit it as the old Chiswick is.

But if, as indeed it must be, some distance from London, it may be found charmingly situated in a lovely country, where with soil of the best and plenty of pure clear air, and sunshine as well as a shelter, a really ideal garden may be furnished. Then what a delight as a day's outing will it be to visit such a garden; and besides seeing all it will have to show, to enjoy the pure air and lovely scenery, constituting in the matter of a visit a most enjoyable holiday. It would be difficult indeed to extract so much from the present Chiswick. If too, as is hoped, the Council can obtain for the Fellows special advantages in the matter of transit, how much will be gained.

Wherever the garden may be, it is certain that some time must elapse ere it can be made decoratively attractive, although that must be a minor object. As to how far it may be wisely or other-wisely associated with a national school of horticulture, sustained by numerous County Councils, time will show. But having called so long and often for such a national school, we must not now be too captious.—A. D.

Judges and Judging.

"AN Inquisitor" (page 179) of our Journal has given us "a hard nut to crack," for it opens up what we may call the whole ethics of the showing of garden produce and the equity and justice of the awards that that produce receives at the hands of those appointed to assess its merits. No doubt a considerable number of communications from well qualified writers will be received; some affirmative, some negative, some commendatory, others condemnatory.

I do not know whether I can help much in the matter; nevertheless, I will try to do my best. Let us put the question propounded by "AN Inquisitor" again plainly before us. "Should the same judges be employed year after year in the same classes at the same show?" Well, my acquaintance with shows, judges and judging is not so extensive as some people's, notwithstanding that I have done a little judging and know a few judges, and, differing from the conclusions of "AN Inquisitor," I unhesitatingly give an affirmative reply to his query, assuming, of course, and this is not an unreasonable assumption, that the right men have been selected in the first instance. By right men I must be understood to mean, good, capable, practical, all round, or specially gifted men; men of broad minds, sound common sense, and high ideals.

A judge is born, not made. A man may be a very good gardener, but a very poor and incapable judge. I suppose we shall be all agreed that he should have an intimate practical knowledge of the subjects he is appointed to adjudicate upon, their highest possible developments, with the difficulties of attaining those developments, and what we may describe as an historical acquaintance with them in their past and present state. In addition to these elementary but highly necessary qualifications, he must have a quick observant eye, a clear head to balance merits and demerits, a calm but ready decision, with authoritative pronouncement of verdict, and the power of dismissing it absolutely and passing on to the next exhibit. I have known many judges with all these qualifications. One thing is quite certain, that a vacillating minded judge is a terror to his colleagues and a failure as to equitable decisions.

Given these qualifications on a staff of judges societies would, so I contend, make a mistake—a grievous mistake—who changed their judges for the mere sake of changing or from a fancied idea that they ought to change.

I believe it to be a fact that most large horticultural societies have some person of high standing in the gardening world who has a

thorough and intimate acquaintance with gardening and gardeners, and all the leading men in the profession, on whose judgment they rely in the nominating and appointing of their judges; and I say again, when such society has a staff of judges so specially selected, each man or set of men the best in their respective spheres of action, it would be the highest folly to change. These men, the properly selected men, by being thrown together year by year, find out each other's line of thought and judgment. They learn to give and take, to see from each other's standpoint, and having those other essential qualities of openmindedness and tolerance of other men's opinions, they blend together, the work goes on smoothly, and the result is fairness and justice all round.

Now, much change, and particularly indiscriminate change, would inevitably breed confusion; would perhaps throw two men together whose points of view would be the opposite of one another, and if they happened to be obstinately opinionated, as men of strong views often are, their work would be uncomfortably done, and their decisions more or less, often more than less, would be uncertain, unsound, disproportionate, and unsatisfactory.

I say this would be the result as it appears to me, and if so nothing could be more fatal to the well-being of any society than this. Exhibitors would be annoyed, much indignant language would be used by them, the secretaries and other officers made irritable and unhappy, and specially so if the indignant exhibitors should go on to say that they had, in face of such judgment as that, determined never to show there again. I can quite understand that a certain section of judges working long together might get into a fossilised state in their judgments by reason of unitedly going along one line of decisions, but this could not often be the case, because death, sickness, and other life changes do break up the staff in a slight degree most years, and this is all the change that I, for one, should look favourably upon.

Doubtless there may be those who, like "Inquisitor," think differently, and we shall all be glad to hear them, for the subject is one well worthy of discussion, but the above are the thoughts and opinions of — AN OLD PROVINCIAL.

Stopping and Shortening Vines.

For the sake of clearness let it be said that "stopping" has reference to removing the tips of the leading, as well as the axillary, growths of young Vines when in an active state, and that "shortening" applies to cutting back the canes when resting after their season's growth.

A correspondent, "A. J.," described generally excellent practice on page 182, March 1st. Mr. E. Molyneux (page 199) rather questions the soundness of that practice, and submits what he conceives to be an improvement on it. Possibly it may be, though I am not confident it would be as carried out by all growers of Vines, and at least I am of opinion that "A. J." did not "commit" any serious "error" in his routine.

It is due to Mr. Molyneux to say that he is the exact reverse of a carping critic. When he differs from any published statement he almost invariably propounds some practical alternative to the procedure previously advocated. This is entirely commendable, but it does not conclusively prove the existence of an error of such a nature that may be likely to lead many readers astray.

Mr. Molyneux's method of shortening the canes of resting Vines to within two eyes of the base is excellent, always provided this is done at least two months before planting, and also when the fullest light can reach the cut-backs in the position in which they are planted. In not a few vineries the front wall is raised considerably above the border, and in several a flat stage runs along about level with the front sashes, and over from two to four rows of hot-water pipes. This may not be the best arrangement, and is not advocated; but it exists, and to plant such close cut-backs in such positions inside the house would be as bad as the wall and pipe arrangement, if not worse. In all cases of the nature indicated an extension of cane must be allowed to bring the two uppermost buds to what may be termed the light line to insure a strong growth to form the future Vine. The distance between the ground and light line should always be measured where the young Vines intended for planting are shortened. Grand Vines and crops of Grapes have been produced when the planting canes had to be left 3 feet in length.

Even under favourable conditions—i.e., when the border was little below the level of the front sill—entirely satisfactory results have followed the plan of shortening to about 18 inches, and when the lower bud is allowed to extend to develop half a dozen leaves or so, as advised by "A. J.," the base of the stem thickens satisfactorily, as it would, of course, under Mr. Molyneux's plan, in a natural way. There are circumstances in which either of the methods may be better than the other, and neither of them, in the absence of essential qualifications, can be justly described as erroneous. Something might, perhaps, be advantageously said on summer stopping, but this must await a more favourable moment.—AN OLD EXHIBITOR.

The Renovation of Old Fruit Trees.

(Concluded from page 196.)

I HAVE given in detail that part of the process of renovation which applies to the stem and branches of the tree. The work does not, however, stop here. A healthy and successful growth of the tree above ground is only to be obtained in conjunction with an equally healthy life underground. The development of a tree is always limited by the existing conditions of its root development, and therefore the nourishment of this portion of the organism, at all times exceedingly important, becomes considerably more so in the case of old trees such as I am describing. For it is obvious that with aged trees, as with aged persons, greater care must be bestowed on the channels of vitality if energy is to be preserved.

The need for special attention to the roots of these old trees is this:—A different kind of growth has to be encouraged; a growth which shall be more fibrous and nearer the surface than that which already exists—fibrous, for the better reception of plant food; nearer the surface, that this food may be the more easily supplied. In the case of trees planted in the kitchen garden, fork the surface soil over lightly from time to time, and in the autumn put on a good top-dressing of farmyard manure, which shall be allowed to remain throughout the winter to the spring, by which time the goodness will have been washed into the soil. Then fork over lightly again, add a sprinkling of some good fertiliser, and work well into the soil. If dry weather sets in, mulch again with farmyard manure and moisten as often as is necessary with plain water or with what is much better if it is available, liquid manure from the farmyard. In this way surface roots are encouraged.

It may also be added that a top-dressing of soot has a tendency to bring the roots upwards. Having done this, never allow a spade to be used near the trees. If they are found to be making too much wood and leaf without fruit (which is rarely the case with old trees), withhold the manure, but continue the mulching throughout the summer with any light material that may be available to prevent the roots being damaged by the heat. If the trees are planted on grass, encourage the surface roots as much as possible by top-dressing with farmyard manure, and, if the weather is dry, use plenty of liquid manure. Do not, however, allow the trees to get too dry before the watering is commenced, as it is very difficult to get the water to soak down when the ground is too dry.

I have only lightly touched on pruning, but this is one of the most important points to be observed in the renovation of old fruit trees. This must be done on somewhat similar lines to those adopted in dealing with a young newly planted bush tree until the head is formed. There is often a large amount of vitality in an old tree, and when it is cut back the young growths are much stronger than in newly planted ones, and as a matter of fact there is more leafage. Now, this pruning and regulating the growths have a most marked effect on the root action of the tree. It seems that there is a large

store of potential energy which is ready to come into action as soon as the trees are cut back, for the root and top act simultaneously.

All the weak spindly growths must be cut clean away, and also such of the stronger ones as are not required to form a symmetrical head. If too much is left a thicket of wood is formed which is fit only for the birds to build in. Good, well-coloured fruit can never be obtained under such circumstances. Therefore, regulate the young growths, in order that sun and air may have full play on every leaf and bud. It will be necessary to shorten the growths, but they must be shortened back to good, well ripened wood. That is absolutely necessary, not only to encourage more active root action, but also stronger wood and larger leaves.

The probability is that unless the new growths are cut back to well matured wood the leaf will not be more than half the size and

substance it should be. The larger and healthier the leaf the more fully will the fruit bud be developed, and without a well developed fruit bud it is impossible to get fruit. It is obvious that judicious pruning is of the utmost importance, and should go on from year to year. Thousands of trees are left entirely to chance, or so carelessly pruned that a crop of presentable fruit becomes almost impossible. But with treatment such as I have described a splendid tree will be obtained in three or four years, which will well repay the labour bestowed upon it.

What has already been said concerning Apple trees applies equally to Pear and other fruit trees. The great objects are to secure fibrous and superficial root formation underground, and clean, healthy, vigorous growths from the stem. We have lately been passing through a series of very dry summers, that have proved detrimental to the free growths on old trees. Hence the necessity of paying a little extra attention in the way of watering, mulching, and feeding in order to assist the growths as much as possible.

It may not be out of place to deal very briefly with the insect pests as they affect old trees. It is of the greatest importance for the well being of the trees that they should be kept clean. Scraping off some of the old dead bark will do no harm, provided it is done with care,

so as not to interfere with the inner skin. As with old Vines, the scraping must be done judiciously, and not too hard. Wash the stems with a rather strong solution of softsoap and water; this will kill most insects found lurking under the old bark; then apply a dressing of soot and lime of the consistency of thick paint, which will to some extent prevent the insects from depositing their eggs on the stem.

I should like in conclusion to touch very slightly on two other points. The first is with regard to gathering the fruit. Unless some care is exercised a large number of buds are destroyed. After trees have been subjected to the renovating process for a few years, they naturally have a quantity of spurs which bring fruit, and it often happens that through careless gathering, the bud for the following year's fruit is destroyed.

The second point is also connected with fruit harvesting; it is—the preservation of the leaf—for this has an important bearing upon the full development of the following year's fruit bud. If we observe the course of Nature, we shall know that the fall of the leaf takes place considerably after the time of gathering the fruit, and when one sees

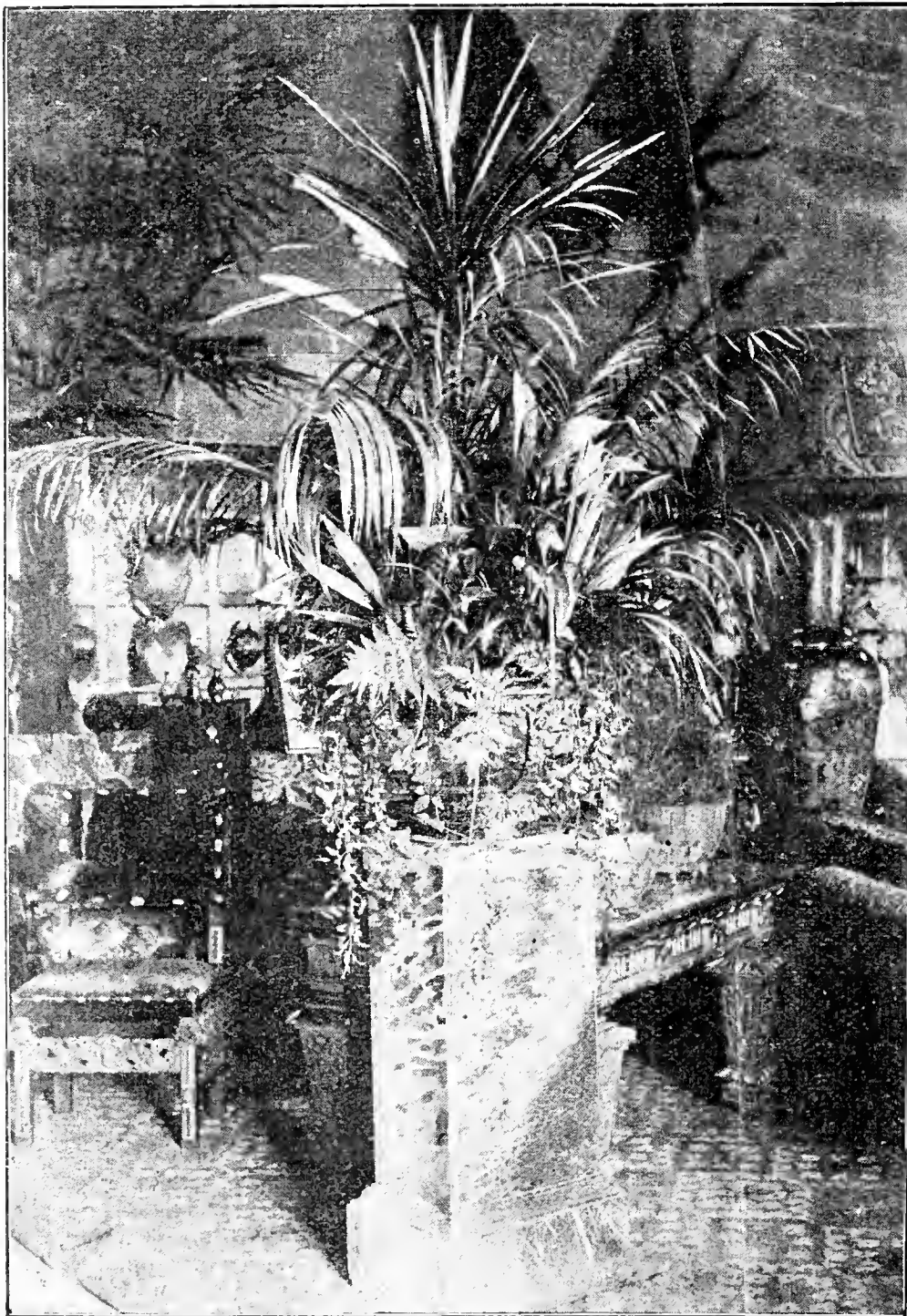


FIG. 66.—PEDESTAL STAND OF FOLIAGE PLANTS.

the ground covered with leaves which have been carelessly plucked off at picking time, it is evident that the tree has been partially denuded of its clothing before the proper time. Therefore, in picking, endeavour to preserve both buds and leaves for the sake of another season's crop.—(Paper read before the Reading Gardeners' Association by MR. T. NEVE, Sindlesham.)

A Few Hints on House Decoration.

MODERN decorative work has undoubtedly been developed into a fine art, and to carry it out successfully the artist must take into consideration the size and form of halls or rooms to be embellished, and so arrange the material at command as to give a due sense of proportion between prominent plants or groups, and the rooms in which they are disposed. In a large lofty hall it is quite impossible to secure such desirable results without the aid of fine bold Palms, or some means of elevating smaller ones to the required height. Pedestals surmounted by large massive vases are just the things required to help the decorator out of such difficulties, and for that reason I trust the accompanying illustration (fig. 66) will prove both interesting and useful to readers of the *Journal of Horticulture*, and not unworthy to adorn the pages of so prominent a periodical. When, as in the case of the illustration, the pedestals are of marble, their great weight keeps them firmly in position, no matter how heavily laden the vase may be; when, however, pedestals of lighter material are used there should be some means of securing them to the floor, or to a larger base, or accidents will occur.

The arrangement given is formed entirely of foliage plants and Ferns, without the addition of a single flower; but by paying due regard to that point which is so necessary in decorative work—viz., variety of form in those materials employed—the effect produced is bold, striking, and interesting to note in detail. The central plant is a rather tall one of *Dracæna Veitchii*; beneath it are a few plants of *Cocos plumosa* and *Kentias*, with *Aspidistras*, Ferns, and *Smilax* to complete the arrangement. Some of the smaller plants are turned out of their pots, and all are packed firmly in moss, yet the foliage is abundant enough to completely hide the moss. For special occasions, should the group need lightening with flowers, these can be used in a cut state, by fixing them in tin tubes of various lengths, and thrusting the tubes into the moss. A much better effect can be secured by using flowers in the above way than by relying on plants growing in pots.

The position of the pedestal is also worth noting, as it is placed at the corner of a massive table, where something seems to be required to give relief and tower upward in the lofty hall in which the pedestal

stands. A couple of such pedestals and a few tall *Kentias* or *Chamaerops*, with masses of flowers beneath, would convert into a perfect fairyland many stately halls in the great homes of England which at present lack such striking features, although they are really as necessary as suitable furniture when the object is to secure a fine effect.

When arranging cut flowers one generally has to make the best of whatever vases are at command, but these are sometimes by no means well adapted for displaying flowers to advantage, and the light and pretty effect so necessary is then difficult to secure. When rather tall arrangements are required for placing in prominent positions, large trumpet-shaped vases are generally used, and although they are quite suitable for such purposes, it is, I think, wise to sometimes have flower stands of different forms for the sake of variety.

Some which are placed on the market are exceedingly well designed, and enable a good decorator to produce delightful arrangements with comparatively few materials. Fig. 67 illustrates a French Bamboo flower stand dressed with flowers and foliage. These can be obtained in sizes ranging from 13 inches to 6 feet. In the top of the Bamboos tubes for holding water are inserted; there are generally two tiers of tubes. The flowers employed in the arrangement depicted are Callas, Daffodils, a long spike of *Odontoglossum*, and a few other Orchids. Long shoots of *Cyperus alternifolius*, fronds of *Adiantum formosum*, *A. concinnum*, *Phlebodium aureum*, and Daffodil leaves supply suitable greenery, and a few trails of *Smilax* and *Ivy* give a light draping to the base of the stand. Occasionally we hear a "wail" in the horticultural Press in regard to the alleged artificiality of flower arrangements, and the writers bemoan the fact that flowers are not more often associated solely with their own foliage. I fear their criticisms will not alter present methods, for the simple reason that a lighter and better effect

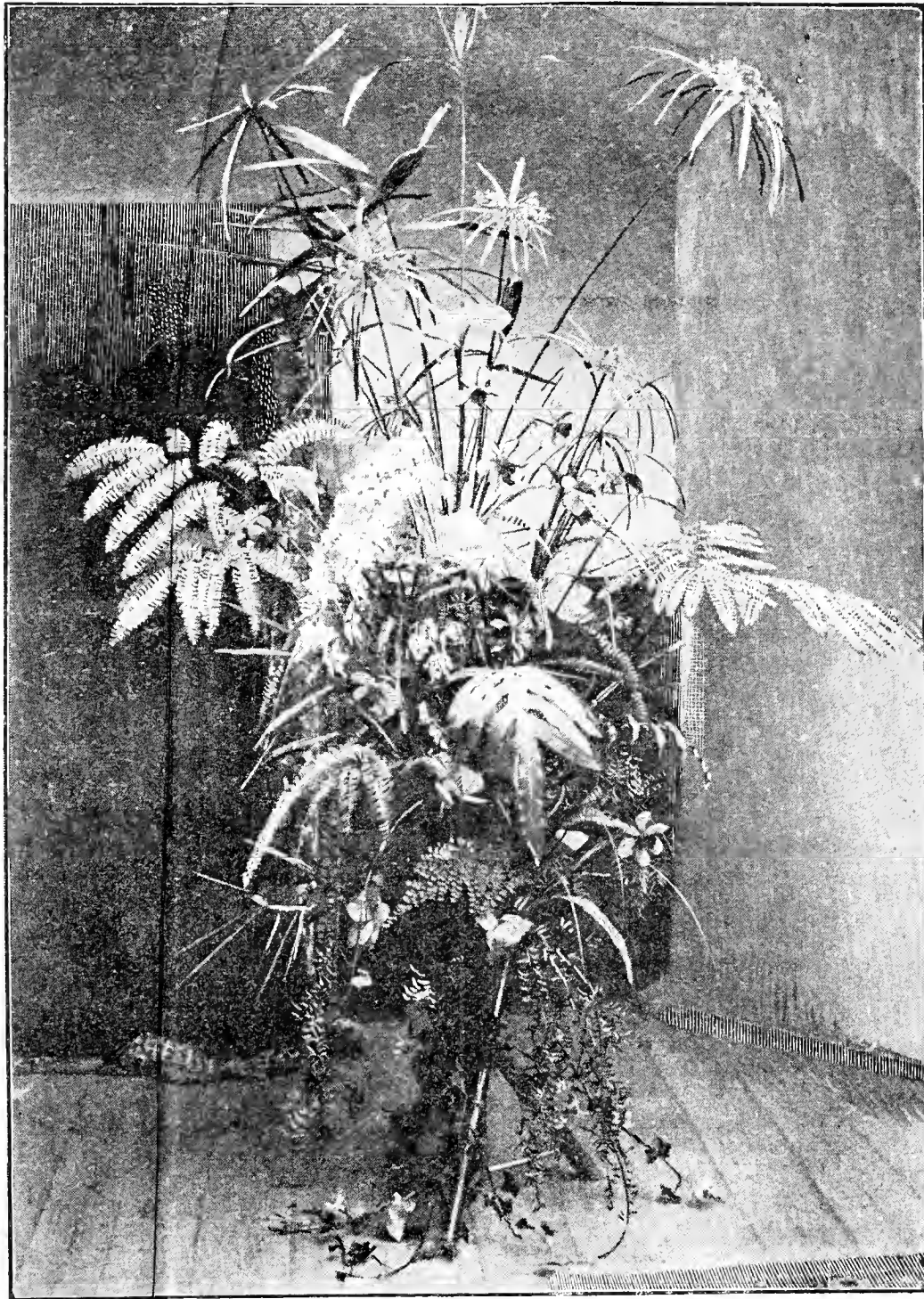


FIG. 67.—BAMBOO STAND OF FLOWERS AND FOLIAGE.

is invariably obtained when green and other foliage are associated with flowers, as well as some of their own leaves.

To illustrate my point let us take as an example fig. 67. In that arrangement if I had adhered to the practice the critics think correct, the only foliage used would have been a few Orchid, Daffodil, and Calla leaves, the lightness in the arrangement illustrated could not then have been secured, and the interesting variety in the form of the foliage, which helps so much to make a distinctive photograph, would have been absent, and I think much needed. By all means let us, when possible, arrange flowers with some of their own foliage, but whenever the correct taste—which comes with experience—shows that the addition of foreign greenery gives a more charming effect, let not the critics deter us from giving that artistic touch which will command instinctive admiration.—H. D.



Rose Show Fixtures in 1900.

- June 27th (Wednesday).—Salisbury (N.R.S.) and Richmond (Surrey).*
- „ 28th (Thursday).—Canterbury.
- „ 30th (Saturday).—Windsor.
- July 3rd (Tuesday).—Westminster (R.H.S.), Gloucester, Harrow and Sutton.
- „ 4th (Wednesday).—Croydon, Hereford and Reigate.
- „ 5th (Thursday).—Bath and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Wolverhampton.†
- „ 12th (Thursday).—Brentwood, Eltham and Salterhebble.
- „ 18th (Wednesday).—Cardiff.*
- „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
- „ 24th (Tuesday).—Tibshelf.

* Shows lasting two days. † Show lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear early in April.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Banksian Roses.

THE Banksian Rose does not flower freely in a clay soil unless the plant has a very warm position. The flowers are produced on small hard twiggy growths, which should not be shortened; a close pruning is unsuitable. Gross growths ought to be removed towards the end of summer, so as to admit the sun and air to the smaller shoots, and these, if matured and not shortened will produce flowers. What must be sought for are numbers of rather weak growths, and these must be matured by full exposure to the sun.—ROSARIAN.

Marechal Niel for Profit.

PROBABLY no Rose is more profitable than *Maréchal Niel* when it is successfully grown, as fine blooms of it are always in demand, and usually fetch a good price. But against the profits must be set the time—two, or even three, years—that it takes to get the plants into a healthy state, so that a regular supply of flowers in season can be depended upon. Provided the plants are in proper condition, however, there is no doubt that a house or two of *Maréchal Niels* pay, and pay well.

The method adopted in most places where this Rose is grown to pay is as follows:—The house, or houses, to be planted is usually span-roofed, about 10 or 12 feet high, and 15 to 20 feet wide, with a single path down the middle. (A house suitable for a vinery would do equally well for *Maréchal Niels*.) The whole of the floor space, with the exception of the path, is used as a bed for the plants, and is trenched 3 feet deep, turning out any cold or heavy soil that may be encountered, and at the same time seeing that the border is well drained. While this is being done, sharp sand and manure are worked in with what is kept, the aim being to make the soil lighter and more porous than is usual for Roses. Leaf mould is not much in favour for these borders, as it is liable to breed a fungoid growth which rots the roots.

The borders are sometimes raised if the ground is very heavy and wet, but this is only done when absolutely necessary, as it entails a considerable amount of labour. The plants used are two-year-old, worked on the Briar, and are planted 6 feet apart on either side alternately, near the side walls, so that they can have a straight run up the wires, which are 15 or 18 inches from the glass to allow room for long-stemmed flowers to develop. At the time of planting the Roses usually have one or two stems about 6 or 8 feet long, which are cut back before they break to within two or three buds of the base. When they commence to grow the shoots are all removed except two or three of the strongest, which are encouraged to progress in every way.

During the summer the syringe is freely used in sunny weather two or three times a day, and the floor is kept moist. Water is also generously applied to the roots, liquid manure being used on each alternate watering, with an occasional top-dressing of artificial manure. The temperature is kept fairly high during the early summer to induce free growth, but as the year advances more air is gradually given, until in the autumn the house is left with full ventilation on day and night to thoroughly ripen the wood.

Through the winter air is left on unless very severe frosts ensue, when the house is closed and a little fire heat utilised to keep the temperature from going much below freezing point, though a few

degrees of frost do not hurt the plants. In the spring the plants are cut back to the lowest wire, when disbudding is again practised after they start, and six or eight of the best shoots left, which are trained up the wires at a distance of about 6 inches from each other, the temperature during the summer being the same as in the previous year. These shoots at the end of the summer are from 15 to 20 feet long, and the following spring are allowed to flower.

The first two years being safely got over, the culture afterwards is simple, the growths being cut back annually immediately after flowering to within two or three buds of the base, and the resultant shoots disbudded, leaving only sufficient to fill the wires, and keeping these tied regularly so that they do not grow into a confused mass. Plenty of syringing, watering, and feeding during the summer, and changing the manure frequently, will produce growths that will flower at every joint for nearly their whole length. As many as fifty-two flowers and buds have been counted on a single shoot; and that has only been one of many.—C.

Zonal Pelargoniums for Winter.

“GERANIUMS” (Zonal Pelargoniums) play an important part in the decoration of the greenhouse during the winter months. The simple treatment they require to insure a good display of bloom has won for them a leading position amongst greenhouse flowering plants. Some varieties are much better for winter blooming than others, and I have proved them to produce flowers freely from October to February.

Cuttings should be taken forthwith and inserted singly in thumb pots. I prefer this plan to placing three or four in larger pots, as the plants when rooted can be shifted into larger pots without experiencing any check whatever. A soil composed of loam, leaf soil, and sand in equal parts will answer. After the cuttings are inserted give the pots a thorough watering through a fine-rose can to settle the soil about the base of the cuttings. A vinery “at work” will be an excellent place to root them in; failing this, a warm greenhouse will answer the purpose, although they will be a little longer in emitting roots there. Their first shift from the cutting pot is into 3 or 4-inch, using a compost of two parts loam and one each of leaf soil and spent manure from an old Mushroom bed. The plants should then be assigned a position near the glass until well established, when, if the weather is favourable, they may be transferred to a cold frame.

From that time onward they should be continually stopped, and the flower buds nipped off as they appear. Five or 6-inch pots ought to be used for their final shift, and should be well drained to prevent stagnation at the roots. A plan I have found to answer well is to place a layer of half-inch bones over the crocks; the roots permeate these, and derive a considerable amount of benefit therefrom at the flowering season. The soil should be pressed down moderately firmly, carefully avoiding filling the pots too full, a good half-inch of space at the top being necessary for watering the plants. As soon as they are well established in the flowering pots, which ought to be by the first week in June, the lights should be entirely removed if fine weather prevails; if the reverse, they must remain on until it is more favourable. The object is to give them as much air as possible without exposing them to too much wet, which would prove of the greatest detriment at that particular time. The pots should stand on a good layer of coal ashes to allow of free drainage underneath.

By the middle of September they must be housed, affording a light airy place in the greenhouse. Stopping the plants may now be discontinued, as also the disbudding, but if extra large trusses of bloom are preferred to a greater number of smaller ones, the points of the shoots should be again nipped out one joint above the flower. This ought to be performed while the flower bud is in a small state, thus concentrating the whole energy of the plant on the perfecting of the blooms. At that stage they will be much benefited by occasional applications of liquid manure, that made from cow’s or sheep’s manure being preferable. Artificial manure is better left till a later period when the soil has become somewhat impoverished; a sprinkling then will renovate and instil new life into the plants. The number of well proved kinds of artificial manure make it a difficult matter to select any particular one as the best. I used to give the preference to Standen’s, but latterly I have found that Thomson’s Vine and plant manure and Clay’s fertilizer give equally good results.

Occasionally the plants suffer from the attacks of a green caterpillar, which if not attacked commits sad havoc amongst the leaves. Owing to their colour the caterpillars are difficult to see, but a sharp shake of the plant will generally dislodge them. Watering must receive great attention, especially at the time when the plants are first housed. My experience is that they often receive too little at that time, the prevailing idea being that they should be kept on the dry side. These conditions, however, will be better observed a month later when the sun has diminished in power; meanwhile if the weather prove bright, a sprinkling with the syringe in the afternoon will prevent loss of foliage and accustom them to their new conditions.—L. J.



The Loquat.—Though a second rate fruit even at its best, and this is not often seen, the Loquat is a useful plant where large conservatories and halls have to be furnished. Seedling plants are best for this purpose, and if not grown too rapidly they are useful for seven or eight years in the different sizes. A fairly stiff loamy soil should be given, this being rammed in very firmly. Give small shifts, and keep the foliage clean by occasional syringing. Should thrips appear they must be at once got rid of by fumigating, or the appearance of the plants is spoilt.—H.

Kennedya prostrata.—Of the many beautiful New Holland plants at one time so popular in English gardens few are now cultivated to any great extent. The plant under notice was introduced upwards of a century ago, and, though rarely seen, is one that might be cultivated largely for a variety of purposes. It is of semi-woody habit, making prostrate growths 3 feet or more long, with small, ternate leaves; the wood and leaves being thickly covered with fine soft hairs. The Pea-shaped flowers are scarlet, with a yellow blotch at the base of the upper petal, and are 1 inch across. They are usually produced in pairs from each node all along the shoots, the flowering period being from February to May. Seeds are the best means of propagation, and equal parts of peat and loam, with a good quantity of sand, form a good compost for seeds and plants. It is equally at home grown as a trailing plant on a tree root, trained loosely on sticks, on a balloon, or in a hanging basket. When grown in the latter way the full beauty of the graceful shoots, flowers, and foliage is best seen and appreciated. Good sized plants can be had in twelve months from seed if grown in an ordinary greenhouse.—D. K.

Early Unforced Rhubarb.—Many persons would fail to realise what an advance may be gained in time of pulling outdoor Rhubarb by the simple use of strawy litter as a covering to the crowns. At the present time, March 14th, I am able to gather short stalks, though a supply indoors does not render this necessary. From this outdoor supply comes much better quality both in crispness and flavour than forced roots furnish. Considering how cold and sunless the season has been so far, it is not a little remarkable that activity can be set up by the simple use of strawy litter as a covering so early. This is not put on until February, for it is better that the winter's frost should be allowed to exercise its influence on the crowns to insure complete rest. Although the early sorts naturally give the quicker supply, it is surprising how it advances late varieties like Victoria. Material fresh from the stable, with the short shaken out of it, is what I use, and as this becomes washed with rain, and sweetened by air and frost, there is no taint given to the stalks by the time they rise upwards through it. It is necessary to raise this as the leaves develop, and shake it lightly over them occasionally, so as to protect them completely from sudden frosts, which so often occur at this time of year.—R. A.

Winter Spinach Failing.—The culture of Spinach as a winter crop is fraught with occasional disappointments brought about mainly by the influence of the weather—autumn and winter. Last autumn was by no means a favourable one, for in many places, unless daily watering could be carried on, it was impossible to get the seeds to germinate. Often, too, when such a state of weather is followed by an excess of rain, disease becomes very rife among the plants, and the supply is reduced to a minimum. This is what has happened this winter, and the scarcity of other vegetables made it the more keenly felt. A reserve crop, however, of the useful Spinach, or Perpetual Beet, has once more justified its sowing, and proved a good substitute. April or May are suitable months for sowing. Once established all that is needed is to keep the soil free from weeds by hoeing. By reason of the continuous rain and snow, no seeds of the ordinary summer Spinach could be sown outdoors until the first week of March, and in heavy soils not even so soon as this. The present month for the first ten days was dry, and by lightly forking over the surface, the action of drying winds had a marked influence for good, and allowed of sowing several days earlier than would have been possible if the ground was left unmoved.—S., Wilts.

Damping Off.—This term is applied to the leaves, flowers, or stems of plants. Its effects are most marked on young and tender seedlings when crowded together, or placed under unsuitable atmospheric conditions. It is caused by a fungus, and is usually traceable to an excess of moisture that may be suspended in the air or applied to the roots. Damping off amongst cuttings is often caused by allowing them to become dry, and then suddenly applying too much water. A temperature in a glass house or propagating frame lower than that outside very often gives rise to "damping." Immediately damping is detected amongst tender seedlings, says a contemporary, they should be separated and placed out singly in fresh soil. This will invariably check it, but the operation is best performed before damping begins.

Aphelandra aurantiaca Roezli.—A group or two of this brightly coloured Mexican plant make a charming addition to the stove in winter and early spring, besides being an admirable plant for house decoration where dwarf plants are required. The flowers are tubular, $1\frac{1}{2}$ inch long and $\frac{3}{4}$ to 1 inch across the mouth, about thirty flowers constituting an average raceme. Although plants may be grown for several years it is preferable to raise a new stock each year from cuttings. These should be inserted in sandy soil in March or April, and plunged in a case with a brisk bottom heat. After they are well rooted they should be potted into 3-inch pots in a mixture of loam, peat, and sand; afterwards they ought to be moved into 5-inch pots in which they should flower. Arranged with foliage plants the brilliant flowers are particularly pleasing, coming at a time when bright coloured flowers are usually scarce.—D.

Ferns in New Zealand.—In a place that was formerly all forest, but which is now more or less cleared, there are on the high ground acres of *Pteris scaberula*, a most beautiful Fern; *Lomaria discolor* is in plenty, and grand, as are many other Ferns. At the bottom of the valley is a good stream, and along its banks are charming Ferns. Where the cliffs, overhung with scrub, are close to the brink, *Todea intermedia* hangs in all its beauty, *Lomaria fluviatilis*, *L. filiformis*, *Pteris macleteria*, *P. incisa*, *Asplenium bulbiferum*, *falcatum*, *flaccidum* and *obtusatum*, and *Polypodiums luxuriate*. Grand specimens of *Dicksonias squarrosa* and *antarctica*, *Hemitelia Smithi*, and *Cyatheas* are frequently met. Ferns have often lured me to the bush, and in my own immediate neighbourhood, within an hour's walk, I can find about forty species, some more plentiful than people used to be on Clapham Common on Derby Day, and others just the reverse. I propose to write again, as I want to try if I can send some *Adiantum* fronds for identification. I have one plant which was quite small five years ago, and is now 6 feet through, without any tying out, and nearly 5 feet high, the actual fronds, rachis, and all being about 40 inches long.—W. H. TAYLOR, Wellington, N.Z.

Birds and Crocuses.—I was invited the other day by a neighbour to explain how it was that sparrows destroyed yellow flowered Crocuses only, and did not touch those of other colours. My neighbour thought the birds were offended by the glaring hue of the yellow Crocuses. I prefer to think that the birds do not pick off the flowers wantonly, but do so because they find in them some secretion that is sweet, and of which other coloured Crocuses are deficient. But it would be very interesting to be able to learn from any source, if such information can be given, what is the real cause of the damage thus done to these flowers. I take it that their action in relation to Crocuses and Primroses or Polyanthus is ruled by the same object or motive. No doubt we shall find some correspondents writing to say that with them the sparrows destroy *Crocus* flowers of all colours. Certainly with Primroses and Polyanthus they are no respecters of colours. When looking over the huge breadths of variously coloured Crocuses on the grass at Hampton Court just recently—and there are tens of thousands of them, extending over a very large area, and constituting a most beautiful display, far excelling in effect anything obtained from beds or lines in borders—I noticed that there was a large number of yellow flowers, but no evidence of harm having been done to them there, perhaps because that portion of the garden is so largely frequented. But in the more private enclosure of the inner gardens, where there is much tree and shrub shelter, many flowers of yellow Crocuses had been picked off; but then there were yellows only in this position. Whatever may be given as the reason, it must be a practical one. To suggest that the mischief is a purely wanton act will not do. Birds generally have a reason for what they do, and I can only think that sparrows find in the *Crocus* flowers something which they like.—A. D.

Cinerarias.

It is generally acknowledged that at this period of the year Cinerarias are amongst our most useful and effective decorative plants, especially if the varieties are of good self colours. Pretty as a mass of mixed colours may be, I think that a group of selfs, in colour, such as reds, whites, and blues on the conservatory floor forms a sight not easily surpassed. There seems to be an idea that the Cineraria is not so well grown now as in the past, and I think we may admit that we do not usually meet with such fine individual specimens as was the case twenty or twenty-five years ago, owing doubtless, in part at least, to its liability to attacks of green fly.

I think, however, the chief reason is found in the change time has brought about; the requirements of those days were vastly different from what are expected at the present. Some years ago the finest specimens for conservatory decorations seem to be preferred; to-day we must have small plants suitable alike for house or conservatory decoration. This is the general rule, whether we look at the matter from a private or commercial point of view.

This, then, does not encourage the assumption that the Cineraria is not so well grown now as in the past; on the contrary, I think that time has done much to improve it. Certainly there is no comparison in the size, the colour, the form, and general quality of the flowers of to-day, and notwithstanding the introduction of various other acceptable plants during recent years, it is still a favourite, and as indispensable as ever. Not only is this the case in our private places, but as a plant of commerce, for we gather that the Cineraria is most extensively grown for the supply of the metropolis and large midland towns, where it is in great demand by those whose lot does not admit of their enjoying the beauties that are so common to ourselves.

It is generally considered that the Cineraria is of easy culture provided the conditions essential to the plants' well-being are always kept in mind. The first point is how to secure a really good display of bloom, and this can only be done, if seeds are relied upon, by procuring the best strains possible. The time of sowing must be governed by individual requirements. Where two or three separate collections are grown a good time to commence would be about the middle of March, with successional sowings in May and July; these would give flowers from November to the end of May. The first consideration must be the raising of the young plants. There are two methods—namely, the sowing of seeds, and propagation by cuttings. The former is the more general, but the latter is the better for certain purposes, because we cannot depend upon getting a particularly good variety true from seed.

Of course we must have, as I said before, seedlings from an excellent strain, to get high class flowers. A good means of obtaining the choicest varieties is to select a plant producing the finest flowers and of a good habit of growth to propagate from. By this system one can collect in a couple of seasons a very fine stock. I usually sow a number of seeds about the middle of May, but, as I have before stated, one must be guided by one's own requirements. The pans should be filled to within an inch or so of the rim, using a compost of loam, leaf mould, and sand in about equal parts, the whole being run through a sieve; make the surface fairly firm and level, and then give a thorough watering through a fine-rosed can. Let the pan stand for a time before sowing the seeds, then scatter them thinly and evenly over the surface, and finish with a thin covering of sand. I am aware other methods are adopted in raising Cineraria seeds, some growers preferring to cover the seed lightly with sphagnum moss; others again use no covering, simply keeping the seeds perfectly dark until they have germinated, then gradually bringing them to the light.

After covering the pan with a sheet of glass, it may be placed at the foot of a north wall or hedge, under a hand-light or frame, or wherever there may be available space; they should be kept close to prevent evaporation, as I believe in the vast majority of cases want of moisture is the cause of failure in the germination of Cinerarias, as well as many other small seeds we grow under glass. If, however, the frame be kept closed, as advised, and a good soaking given in the first place, this will be found sufficient until the young plants appear. Do not allow the sun to shine on the glass, and it is also well to raise the pan, to prevent slugs from eating the tiny leaves as soon as they appear, at which stage remove the glass. If the advice of sowing thinly be followed, nothing need be done until the first rough leaves are formed; they should then be carefully raised out of the earth and placed singly either in small pots, or again be placed back into pans or boxes, using similar soil.

Here occurs to me that many of us in our desire to secure what we think a good stock are apt to take the quantity and leave the quality, or in other words, we take the stronger seedlings and leave the smaller, which in many cases are the cream, as regards quality. It is, therefore, advisable to take every care of these weaker seedlings,

which should be pricked into pans and treated as their stronger companions. They must be kept moist by lightly sprinkling with water; also be close for a week. In a short time roots will show through to the side of the soil, and the plants may be transferred to 5-inch pots. The compost should be somewhat coarser at this potting, and must be pressed in rather firmly with the fingers to induce a sturdy growth. After a few days when the roots will have taken to the new soil, admit air freely in the frame, which should still be in a position where the sun does not beat directly upon it, or if so it must be shaded.

It is excellent practice to raise the frame on a brick at each corner. This will admit of a current of air passing among the pots, which will conduce to stronger root action, and assist in keeping the plants sturdy, which must be one of the chief objects in view. In this position the lights may be kept off during fine weather, but should be in readiness for use in the event of heavy rains or thunderstorms.

Before proceeding further I will speak of offsets. The best time to take these, if they can be had, is while the plants are in flower. In most cases suckers spring from the base, and these are what we require. Cut them off with a sharp knife, and put singly in small pots. The hand-light will be a suitable covering for them, and they must be kept moist and close as advised for seedlings. These cuttings root in a very short space of time, and as soon as this has taken place the plants may be put direct into 48-pots, and be treated in the same manner as the others.—(*Paper read by MR. W. H. DAMERELL, Underbank, at a meeting of the Torquay Gardeners' Association.*)

(To be concluded.)

Droitwich Experimental Garden.

MR. J. UDALE, F.R.H.S., sends us a report of the above experiments, as conducted by him for the Worcestershire County Council in 1899. The garden, which is 2 acres in extent, was established in 1896, and is well stocked with the different kinds of fruit, while vegetables have adequate attention in the form of comparative trials of varieties, and the effects of different manures on them. The report is an elaborate one, and evidently the work is carried out with great care, and the results systematically tabulated. The garden appears to be increasing in popularity, as there is an increase in the number of visitors from 911 in 1897 to 1809 during 1899. The soil is described as dark sandy loam, the subsoil very gravelly marl, and of a naturally dry nature. A few of the season's results may be noted.

FRUIT EXPERIMENTS.—Of the larger kinds—Apples, Pears, and Plums—the trees are obviously too young for displaying the characteristics of the varieties; but New Hawthornden, Court Pendit Plat, Lord Grosvenor, and Lane's Prince Albert appear to have made the best start in yielding; and, as might be expected, vertical cordons were the most productive form of trees. Gooseberries show how quickly some of the varieties come into profit. Whinham's Industry heads the list in productiveness, followed by Rough Green and Whitesmith, all free growers. Red Currants: La Fertile (Red Dutch) is described as the best, both in vigour and fruitfulness; Victoria the next in merit. The timely application of black cotton from branch to branch prevented injury to the buds. It is allowed to remain permanently. Among Raspberries Superlative is proving itself the best variety for all purposes. The most productive Strawberry of the season was Royal Sovereign, Countess excelling all others for flavour.

VEGETABLES.—Of these many kinds were tried, and the produce of several were sold as a test of their value. In a trial of early Potatoes Sharpe's Victor gave slightly the best yield. It was closely followed by Ringleader, the next in order of merit being Sutton's A1 and Webb's Early Ash-leaved. Windsor Castle gave the heaviest yield of the main crop varieties, followed by Ninety-fold, Supreme, and Reliance. Sets of 3 ozs. weight were found more productive than 2 oz. sets. Onions were tested as to thinning. With all the rows a foot asunder, in four out of five trials the heaviest yields were produced by thinning the plants to 2 inches apart. In the trial of spring Cabbages Early Offenham realised by sale close upon £40, Mein's No. 1 £37, and Ellam's Early £27 an acre. They were all sown on August 11th; cutting of the first-named variety commenced on April 22nd, of the second on May 20th, and of the third on May 27th.

MANURES.—With practically all crops chemical manures proved much less satisfactory than farmyard manure, also than decayed and burnt vegetable refuse, the effects of the chemicals being presumably nullified by the extremely dry season. A mixture of superphosphate, nitrate of soda and kainit, scattered in the drills when sowing the seed, had a pernicious effect, for Peasso treated were destroyed as they germinated, few plants appearing. Some of the rows were left as an object lesson of how not to apply chemicals; others were hoed up and sowing repeated without adding more of the fertilisers, satisfactory results following. The Rape meal manure "Homœo" was found excellent in promoting growth and in repelling wireworm attacks on root crops. Mr. Udale has done his work thoroughly, and his report is interesting and suggestive.

Hardy Flower Notes.

" * * Through the glades the balmy southern air,
And birds and boughs proclaim that spring is here."

THOUGH the lover of hardy flowers need not long be without a few of the objects of his care, this season has been a laggard one. Not that its lingering steps have not brought compensation, for the flowers have stayed so long in the lap of Mother Earth that when they did appear their blossoms have had a more kindly time than often falls to their lot in this climate of ours. We are enjoying, as this is written, calm days. Sunshine is not plentiful, but wind and rain are not troubling us, and tender-looking blooms stand longer in beauty.

Though the sweet winsomeness of the greater number of our spring flowers has not yet appeared, we have many of the early flowers. The "Fair Maids of February" have, many of them, waited for the coming of March ere they drooped their pure blooms from the fragile-looking stems. They are as lovely as ever, whether they come in the form of our common Snowdrop or in that noble flower *Galanthus Melvillei*. The many beautiful varieties of the Snowdrop are alluring in their beauty of form and chaste colouring of white and green; the latter exchanged in some three or four varieties for pleasing soft yellow markings. Fortunately even the earliest Snowdrop has lasted long this season.

Distinct in many ways, the Snowflake is no unworthy rival or companion to the *Galanthus*. Its large open bell-like flowers do not show much likeness to the Snowdrop, yet one finds a good many people still who think it is only a *Galanthus*. Its flowers are charming with their satiny lustre, and the beautifully marked spots on the exterior of the segments. Perhaps the best is the tall robust species, which generally gives two flowers on a stem. This is the variety *Vagneri* of Mr. Baker, though it is usually sold as *L. carpathicum* (fig. 68) by the bulb dealers. It is earlier than any of the other forms. It is unfortunate that so few know the worth of *Leucoium vernum*, the Spring Snowflake, and its varieties. Those only who claim acquaintance with the Summer Snowflake can have little idea of the superior beauty of its vernal sister, with its neater habit and larger flowers.

The fine weather since a stormy February ran its course has been extremely favourable to the Crocus. The season being late, not many of the varieties of *Crocus vernus* are in bloom as this is written, save in the sunnier spots. It is a misfortune that people know so little about the Crocuses which are not usually embraced in the lists of bulbs sold by the ordinary dealer. Without touching on the charming Crocus species, we have varieties of *Crocus vernus* which are not generally known. I have one beautiful variety in flower at present that is named *C. vernus picturatus*. The ground colour is white, exquisitely decorated on the outside of the outer segments with a charming feathering of purple. Near it I have just coming into bloom that curiously pretty form known as *George Maw*, whose white flowers have a golden stigmatic band up each segment. Then there is the very pretty variety of the same species called *leucorhyncus*, whose white flowers are so distinctly feathered with purple. It bears the popular name of "Pheasant's Feather Crocus."

Crocus biflorus, too, yields us some pretty flowers. I am never tired of looking upon the typical form, whose white flowers with their yellow zone peep from among the grassy leaves. There are, however, varieties of great beauty, though a little higher in price, which are worth looking out for. There is the exquisite little gem named *Pestalozzoe*, whose small and shapely white flowers look so charming in the rock garden at the present time. The variety *Weldeni* is also very fine with its pretty blue markings on the outside of the segments. I have on the table before me a variety of *Weldeni* that was sent me by a Crocus-loving friend in the south. The marking on the outside is much deeper than usual, and one longs to possess so pretty a form. One could say much more of that flower which now enamels the ground with almost all colours, from white to purple and from pale yellow to orange with many lovely markings. Space forbids, and other flowers must have their due.

We catch here and there a glimpse of blue and white, purple and pink, from the flowers of the *Hepaticas*. They are charming where they are at home, and I often wonder that those who have time do not raise seedlings from their own flowers. It is interesting work, holding forth always the hope of something new.

Charming flowers are those hardy *Cyclamens* nestling under the rockwork's semi-shade. They are *Cyclamen Coum* and three of its varieties. Their beauties are incontestable, though there are some who worship the fetish of size who look at them a little disdainfully because, forsooth, their blooms are not so large as those of *Cyclamen persicum*. This is quite true, but then the latter needs not only glass to shelter it, but also heat to bring it into bloom at this season, while this little beauty of which I speak is not only content but happy in the open.

If, as some hold, expectation is better than realisation, we who love the Daffodil ought to be supremely happy. All about us are the signs of a bountiful crop of the charming flowers of the *Narcissus*. Healthy leaves from which are emerging many buds give the prospect of a time when the silver and gold of the classic flower will be strewn far and wide, so that all may enjoy the wealth of beauty it yields. Daily, as we stroll round or work near them, we think of the promise of the future, and wait—not impatiently, for other flowers give us pleasure now—for the opening of these perfect flowers.

We have had for some time the earnest of the reward which awaits us in the curiously beautiful little *Narcissus minimus*. I call it "curiously beautiful" because it is. It is curious because of its miniature size, and it is beautiful with the most of the charms possessed by the more striking loveliness of its taller sisters. Its earliness is no slight



FIG. 68.—*LEUCOIMUM CARPATHICUM*.

merit. Ere passing from it, one would remark upon the variation among collected bulbs. Some few of the flowers may be like the small form first introduced as *minimus*, while others more nearly approach in size *minor* or *nanus*. Any one is worth having and worth protecting from the ravages of the slugs, which in some seasons delight in cropping the flowers, and thus depriving us of our pleasure in seeing these shapely little yellow flowers.

Never before have I had so much pleasure from *Hyacinthus azureus* (*Muscari azureum*). For one thing, it is now increasing quickly, and the greater size of the clump gives a brighter effect with its clusters of closely packed blue flowers. For another, the prolonged cold and snowfall have made it later, and one now reaps the benefit. It is shielded from its arch enemies, the slugs, by its zinc ring, whose sharp edges form a barrier to the foe.

But one must call a halt, even though our tale is not fully told. Much as one delights in telling of one's favourites, the tale may weary some. The garden, too, has its needs, and as one goes round more

and more work seems to await the hand of the lover of flowers. At this season there is much to be done that cannot be delegated to another. We cannot reap without sowing, and the hand of the slothful is of little use where plants abound. The work, however, is pleasant, too, and those who tend in the main their own flowers have sources of pleasure unrevealed to those who leave all to others.—S. ARNOTT.

Death of Mr. Thos. Boyd.

THE many friends of Mr. Thomas Boyd (fig. 69), late gardener to W. Forbes, Esq., Callendar Park, Stirlingshire, will be deeply moved to learn that one so well known and much respected was removed suddenly from our midst on Monday, 19th March. Our friend and neighbour had not been quite well of late, but indicated nothing to show that his end was near. His kind and affable manner had gained Mr. Boyd



FIG. 69.—MR. THOMAS BOYD.

many friends. Either as an exhibitor or judge at exhibitions he was most courteous, and possessed of an unassuming manner, which rendered him very popular. He was a native of Hopetown, near Edinburgh, and from early life had good opportunities of gaining a sound experience in gardening.

At an early period in his career he was well known as a successful exhibitor of fruits—with collections—and Grapes especially. He attended all the international exhibitions in England and Scotland, where his success was always well to the front, and returned

from the shows in possession of many of the most valuable prizes. He received for Grapes two Veitch Memorial prizes—in both cases they were Muscat Hamburgs. He also had many cups and plate which were won in hard contests at exhibitions. He gave a good account of himself for some years at Loch Ryan, Wigtonshire, while gardener to Sir W. Wallace. From there he went to Callendar, where he has so successfully laboured for over twenty years. Mr. Boyd was fifty-three years of age, has left a widow and large family to mourn his loss.—M. TEMPLE, *Carron*.

Hardy Lettuces.

CONSIDERING how badly some winter crops have withstood the weather, it is more than a little surprising to find the autumn-sown Lettuces have come through the winter so satisfactorily. Broccoli, Winter Greens, Spinach, and Sprouts fared badly, as also did an autumn sowing of Endive. The plants from the latter were intended for lifting to refill frames cleared of the early stocks, and were protected with a covering of leaves, but a severe, though short spell of frost completely destroyed them. Among the Lettuces there are surprisingly few casualties, especially with the Hardy Hammersmith and Bath Cos. Paris Market, which in some seasons stands well, and furnishes useful salading much in advance of the others named, succumbed to the frost, and Hicks' Hardy White Cos is less satisfactory than usual. In some springs I have found fuller ranks and better plants of the last named than of the Bath variety, proving that there is no uniformity of results.

Lettuces, like other winter crops, suffer when there is an excess of rain, even without much frost. This year the two first months were characterised by a superabundance of moisture, and some severe touches of winter frost. No less than 8½ inches of moisture were recorded for the two months—January 3.34, February 5.19. Some heavy snow storms contributed to this total, and while there was sufficient depth, gave protection to Lettuce crops. Under warm sheltered walls growth is now proceeding actively, and some plants are ready for

cutting. There have been seasons when as good material could be had in February; in others not until much later than the present moment. The value of these hardy Lettuces is much enhanced where frame room is not available for spring forcing, and even when this is so there is always satisfaction in having a good reserve to draw upon in times of pressure.

For the daily winter salad Endive has no rival, Lettuce taking its place from now onwards, or is used in conjunction with it. An early sowing of such a variety as Commodore Nutt, and the plants prepared for early planting by hardening in cold frames, comes in useful for spring supplies under the shelter of warm walls.—W. S.

Amaryllis Culture.

At a recent meeting of the Devon and Exeter Gardeners' Association Mr. Slade, the well known gardener at Poltimore Park, read an excellent paper on these handsome plants, prefacing his cultural remarks with some historical references. The chair was taken by Mr. Andrew Hope, and there was a good attendance. We make a few extracts from the paper as reported in a local contemporary.

At the outset Mr. Slade gave a brief sketch of the progress made by the hybridisation of these flowers during the past century. Dean Herbert hybridised the African and American species, and founded a new genus, which he named *Hippeastrum*, or Knights' Star Lily, whence spring the present race. He then spoke of the failure of the attempts by himself and others to cross the flowers of *Hippeastrum* and *Clivias*. The present race of *Amaryllis* sprang from various wild species. Many of these were named, and the history of the flower brought up to the seedlings raised by Van Houtte of Ghent, and De Graaff of Leyden, the latter of whom raised a hybrid named *Empress of India*, from which have sprung some of the best types. In 1867 Messrs. Veitch took the *Amaryllis* in hand, and having found Leopoldi and another species in Peru, commenced working with them, and by crossing with some of De Graaff's best forms, produced the very fine hybrids of the present day.

The essayist then passed on to the culture of the *Amaryllis*. A good compost is two-thirds of fibrous loam, one-third of cow manure, with a liberal portion of silver sand. These should be thoroughly mixed previous to potting. He himself generally used the refuse from an old Mushroom bed, and with excellent results. The *Amaryllis* should be under rather than overpotted, ample drainage given, and the soil be in a moist condition. January is the best time for potting. If not all potted at one time those left should be kept cool. In potting the bulbs every particle of soil must be shaken from the roots, and all decayed portions be cut away. The roots should be separated, and the soil carefully worked in among them. After potting a temperature of 50° to 60° is desirable, and if plunged in some suitable material it would prove beneficial at first—without bottom heat. A plant house or vinery of the temperature given were useful places for growing the plants in. He grew them in an intermediate plant house until after the flowering period, and then placed them in a vinery with more heat, but only partially under the shade. The plants were benefited while making growth by being plunged and a slight bottom heat given. After repotting no water should be given until the flower spikes and leaves have grown several inches. Then a moderate supply should be given till the flower buds show, when the quantity should be increased.

After flowering the plants should be placed in a warmer house, and slight shading afforded. As growth becomes more active water ought to be given liberally, with daily syringing to keep them clean. When the growth is finishing the shading should be gradually diminished, and water given more sparingly. Later on the shading may be removed, and water gradually withheld until the foliage is ripe, when they should be kept quite dry until they commence growing again. A Peach house, where the fruit has been gathered, and in which the bulbs can be exposed to the full sun, with abundance of air, is a suitable place to ripen them. Some growers do not pot annually, but Mr. Slade thought it better to do so unless the collection is a large one and the pressure of work heavy.

The bulbs may be increased by offsets, but new colours and varieties are raised from seed. In giving some advice how best to deal with insects, he said thrips were destroyed by fumigating, and red spider kept away by the syringe. The *Eucharis* "mite" may attack them if there are errors in watering in the early stages, but he was of opinion that neither *Eucharis* nor *Amaryllis* would be affected by the mite if properly watered. The two essential things to secure success in growing *Amaryllis* are watering and resting; given these, their culture is simple and easy, and they had a most useful flower, gorgeous in effect either in the cut state, or as a decorative plant for the mansion or conservatory.

A prolonged discussion took place as to whether the *Amaryllis* could be grown by gardeners having limited accommodation. Mr. Slade stated that it was practically as easily grown as the Hyacinth, and its treatment was of the simplest. Neither did the plant require any special assistance in the way of heating.

The Royal Horticultural Society.

Scientific Committee, March 13th.

Present: Dr. M. T. Masters (in the chair); Dr. Müller, Mr. Hudson, Mr. Im Thurn, Rev. W. Wilks, Mr. Lynch, and Rev. G. Henslow, hon. sec.

Grapes diseased.—Mr. Hudson brought some specimens which appeared to be attacked with the fungus *Glæosporium*. Dr. Masters undertook to examine it further.

Douglas Fir diseased.—Branches were received from Mr. Rogers of Penallowne, Cornwall. They were from young trees, planted in an old plantation. In some cases the whole tree was unhealthy; but in others the trees grow vigorously, and only the top dies. They were referred to Dr. W. G. Smith for examination.

Pear Stem constricted.—Mr. Rogers also sent a specimen remarkably constricted by a staple. The diameter of the stem being 2 inches, this was reduced to half an inch at the constriction. It had borne good crops of fruit up to last year.

Abies amabilis attacked by Chermes.—Dr. Masters showed specimens of this tree, also called *A. Lowiana*, with gouty branches. The bark was badly infested by an aphid much resembling that which attacks Beeches. The same remedy of syringing with petroleum emulsion is to be adopted if the trees be slightly infested; otherwise the only means of destroying the pest is to destroy the tree by burning.

Hydnora africana.—He also showed a specimen of this remarkable parasite. It is a fleshy, leafless plant, parasitic upon plants of the genera *Cotyledon* and *Euphorbia* in tropical and South Africa. There are about eight species. The specimen was received from Grahamstown.

United Horticultural Benefit and Provident Society.

THERE was a fairly large attendance of members at the Caledonian Hotel on the 12th inst., when this society held its annual meeting. It had been announced that Mr. S. T. Wright would occupy the chair, but unfortunately indisposition prevented his attendance. At very short notice Mr. Richard Dean undertook to preside, and beyond calling upon the secretary to read the minutes of the first annual meeting, he did not take up any time. The preliminaries having been disposed of, Mr. Collins was requested to read the committee's report for the past year, which was as follows:—

Report for 1899.

In presenting the annual report and balance sheet for the year ending January 8th, 1900, the committee have great pleasure in stating that the society continues to make progress in a very satisfactory manner.

Eighty-three members joined during the year, twenty-nine lapsed from various causes, two died, and two ceased to pay, being over seventy years of age; this leaves a net increase of fifty, the membership for the year being 791. The amount of subscriptions paid by members to the benefit fund, including arrears for 1898, was £1236 5s. 3d. The sick pay account was £206 2s., being £52 15s. less than last year. This is covered by deductions from members' deposit accounts of 6s. 5d. and 4s. 4d. respectively. There is a balance now in this fund (including £1201 15s. 11d. standing to the credit of lapsed members) of £12,190 9s. 2d.

The Benevolent Fund is now doing a useful work. Subscriptions amounting to £153 16s. 1d. have been received from honorary and benefit members, including £10 10s. generously given by W. Y. Baker, Esq., at the annual dinner. Various grants have been made from this fund, amounting to £66 5s. 6d. The Convalescent Fund continues to increase. Mr. Baker and Mr. Sherwood each gave a donation of £5 5s. at the annual dinner. Three members only applied for assistance during the year, the amount paid out being £4 only. The Management Fund shows a balance of £129 8s. 10d. The amount invested in Corporation Stock by the treasurer during the past year was £1500, the total invested funds being £15,850, and the treasurer has £153 14s. 11d. in hand.

The annual dinner passed off in a most successful manner, the chair being admirably filled by W. Y. Baker, Esq. The society's accounts were audited by Messrs. G. Dixon and W. Gunner, and found correct.

From the remarks of the committee as set forth above it can easily be gathered that the general affairs of the institution are in a most flourishing state, as indeed they should be considering the advantages derivable therefrom by members. The three funds known respectively as the Benefit, Benevolent, and Voluntary Convalescent, are all admirable, and happily each shows a material improvement in financial status over last year. The management of the society is in every way excellent, and it is evident that the sole desire of the committee is to do the utmost good with the money in hand. There are no lavish expenses for offices, while the secretary, as was remarked during the

evening, carries out his many duties for a surprisingly low salary. As we cannot give the whole of the balance-sheets we reproduce the one read by Mr. Jas. Hudson, the treasurer.

Treasurer's Statement of Accounts.

Dr.	RECEIPTS.	£	s.	d.	1900.	EXPENDITURE.	Cr.
1899.	January 9th.				1900.		
	To Balance in hand ...	128	15	11		By Sick Pay from Benefit Fund ...	206 2 0
1900.	January 8th.					Payment to Nominees of Deceased Members	6 7 2
	Hon. Mems'. Subs. to Ben. Fund...	62	7	0		Payments from Benevolent Fund ..	66 5 6
	Benefit Mems'. Subs. ...	1208	19	3		Payments from Convalescent Fund...	4 0 0
	" Benevolent Subs. ...	88	9	7		Payments from Management Fund ...	138 18 10
	" Convalescent Subs. ...	7	18	9		Investments, Stamps, and Commission ...	1543 6 6
	" Management ...	87	4	8			£1965 0 0
	" Arrears of Subs., 1898	27	6	0			
	" " Ben. Fund "	5	19	6			
	" " Man. " "	5	8	10			
	Rules and Revocation Fees ...	0	8	6			
	Advt's. in Annual Report	7	5	9			
	Hon. Mems'. Subs., and Don. to Conv't. Fund	20	9	6			
	Hon. Members' Don. to Management ...	3	3	0			
	Sale of Certificates of Membership ...	20	0	6			
	Divs. on Investments per Trustees ...	444	13	2		Balance in hand ...	153 14 11
		£2118	14	11			£2118 14 11

As we briefly noted on page 214 of our last issue, this shows a most satisfactory condition of affairs, and it goes without saying that any society that can cover the expenses of management by the aid of its interest on investments alone must have its affairs excellently conducted. The statement of its assets and liabilities is in the same eminently satisfactory condition.

In rising to move the adoption of the report and the balance sheets of the several funds, the chairman made several pertinent remarks, and while confining himself mainly to the statements set forth, threw out one or two hints that he considered worthy of the society's attention. These had in view the extension of the society's business amongst gardeners throughout the country, who either from apathy or indifference had not become subscribers. Mr. Dean congratulated the institution on the splendid progress that had been made, and deplored the fact that there were only 791 members on the books; hence the suggestions thrown out. He wished specially to bring the society before the younger generation of gardeners, and that much might be done in this direction cannot be doubted. In concluding, the chairman paid a graceful tribute to gardeners as a class, describing them as steady, thrifty, and industrious. Mr. W. Marshall seconded the motion, which was carried without a dissentient voice.

The retiring members of the committee were Messrs. Hemsley, Kelf, Winter, Summers, Cook, and Forman, of whom the four first named, being eligible, were re-elected, Messrs. Curtis and Stanbridge taking the place of the other two. Then followed several votes of thanks to various officers for past services, after which Mr. W. Marshall moved the following resolution:— "That the members of the United Horticultural Benefit and Provident Society, at their annual meeting held on March 12th, 1900, desire to record their appreciation of the inestimable services rendered to the fund by the late Mr. John Fraser, V.M.H., as their first treasurer on the formation of the society, and hereby tender their sincere condolences to his family for the irreparable loss they have sustained." This having been seconded, was carried unanimously.

In view of the amount of work that devolves upon the secretary it was proposed that his salary be raised to £52 per annum, but as this could not be done without notice of motion having been given, it was decided to give him a bonus of £10 over and above his salary, and refer the increase to the committee, who in turn would report to a special general meeting. This advance is thoroughly warranted, and we hope will be made. It was decided to print and distribute 5000 copies of the report. Other formal business having been disposed of, a cordial vote of thanks to the chairman closed the meeting.

Grassendale and Aigburth Spring Show.

THE first of the spring shows in our district was opened by the committee of the above society in the Grassendale Parish Room on Saturday last, and notwithstanding the difficult weather that has been experienced, the display of flowers and plants was bright and varied. As to the society itself, one rarely finds such a formidable list of special prizes, which goes to make up a sound financial concern and keeps it intact against weather and other causes. Then, too, Mr. Evans, the chairman, is thorough in every way, and his allusion to the assistance rendered by Mr. T. Johnson, the excellent secretary, and the committee, was well put and heartily received.

For twelve Hyacinths, Mr. F. Field, gardener to J. H. Wilson, Esq., Errington Lodge, Aigburth, staged admirably *Fabiola*, Queen of the

Blues, Grand Maître, and Lord Macaulay. Mr. F. Keightley, gardener to Mrs. Duncan, Prizett, was a good second. Mr. J. Heaton, gardener to R. P. Houston, Esq., M.P., staged a splendid six, whilst for six and three pots (three in a pot), Mr. G. Leadbeater, gardener to W. J. Davey, Esq., Holmleigh, Grassendale, scored. The six pots of Narcissus from the same grower were capital. Tulips were well timed and beautiful, the first prize singles and doubles falling to Mr. F. Keightley. Extra good were the pots of Lily of the Valley, Mr. J. Heaton winning a difficult position. The same exhibitor won with a charming plant of Begonia Gloire de Sceaux, also for three Callas.

The Orchid classes were fairly well filled, the fine specimen of *Odontoglossum Insleayi* (fifty flowers), and *Oncidium Cavendishianum* from Mr. C. Duke, gardener to F. Cross, Esq., 15, Fulwood Park, were stamped with the best cultural skill. For one Orchid Mr. J. Madeley, gardener to W. C. Atkinson, Esq., 5, St. Anne's Road, Aigburth, had a well flowered plant of *Ceologyne cristata*, and he also won the classes for one Rose, a trained *Maréchal Niel*, three grand *Spiræas*, and one *Rhododendron*. The forced hardy plants were capital, considering the weather, Mr. Leadbetter, with a handsome *Lilac* and *Azalea occidentalis* Queen Victoria, being well in advance from Mr. W. Bustard, gardener to J. McLelland, Esq., St. Anne's Road.

In the classes for Palms, Azaleas, and greenhouse plants Mr. F. Keightley was the prizewinner. *Amaryllis* from Mr. Leadbetter were of the choicest description, and this also applies to the grand *Cyclamens* staged by Mr. Heaton. The *Cinerarias* from Mr. J. Lewis, gardener to Mrs. Watts, Grassendale Park, and *Primulas* from Mr. T. Macklin, gardener to W. Harrison, Esq., The Coombs, were of the best quality.

The Young Gardeners' Domain.

Bits for the Bothy.

To Our Journeymen. (Continued from page 206.)

THERE is no more important part of a young gardener's progress than the intermediate stage of his journey through bothydom. Owing, perhaps, to some of the freshness, and a little of the novelty surrounding the life of a young recruit having been left behind, with the more responsible position of a foreman yet ahead, it may be regarded as a comparatively flat and uninteresting stretch of road; and, apart from this, a journeyman's life is apt to run a somewhat even course if he allows it to do so. Herein are advantages and disadvantages. For instance, a young fellow may be told off to a post in the fruit department or the plant houses, and once having grasped the routine of work meted out to him have to hold that post for some considerable time. The exigencies of a large gardening establishment often demand this, and many a head gardener on finding a subordinate working smoothly and satisfactorily, forming, as it were, an important piece of mechanism in his complex machinery, feels reluctant to disturb it by making changes. Thus, one phase of work may not only monopolise a young student's time in one situation, but, as has occurred in some instances, be prolonged by his adaptability and fitness for it in another.

"Have you a young fellow you could send me for my Orchid houses? I want one who has a good grasp of the subject." Thus wrote one head gardener to another, and a young man who had been solely among Orchids for three years, for higher wages and the work that he loved, readily exchanged into what was practically no change for him. As with this, so in other departmental lines have similar cases been observed. That the system is not a common one is admitted, but sufficiently in evidence it is thought to claim the attention of our lads here, as well as to account for some things in after life which cannot otherwise be easily explained. That it possesses advantages is obvious, for not only are the details of the one particular phase of work, like an oft repeated lesson, thoroughly mastered, but at this receptive age of life our journeyman is metamorphosed into a specialist; and, in all probability, his whole life and life's work will bear the impress of individuality. If men thus trained could find positions for life as specialists, for which they are so eminently adapted, well and good, but the demand for such is extremely limited, and it is generally well understood that our boys of the bothy are to all intents and purposes intended for gardeners in its broadest and most comprehensive sense. Taking this to be their objective, they should not under any circumstances ever lose sight of it, lest on obtaining their commission they should be found wanting.

At first sight this matter is to some extent one over which a young man has little control; how much the more necessary is it, then, that he should avail himself of every opportunity, however obscure, to obtain a practical knowledge of what he must sooner or later profess to know all about. Employers, however, are generally willing to stretch a point when it becomes plainly apparent to them that their young men are really anxious to learn, and willing to make small personal sacrifices in order to do so. Perhaps the simplest way of carrying an object lesson home will now be to personally address some young reader who finds himself among this restricted class it has been the endeavour to depict. As previously stated such cases may be exceptional, but in reality there is scarcely a garden, or a young

gardener, to which the principle does not apply in some degree. To clear the way a clean jump may be made from the journeyman's position as a budding gardener to that stage where he blooms out in all the glory of a "head."

What excuse have you, young friend, when, having accepted the responsibility of the care and management of a good garden, some prominent part of it eventually becomes a speaking witness of ignorance or neglect? We will say the wall trees, for instance, over which there has been of late some pertinent discussion in these pages. Will your skill as an orchidist or a plantsman atone for this or any other important deficiency? No. There is no excuse. You may shine in the show among fine specimen plants, but a cloud will hang over those garden walls fatal to your character as a gardener—a gardener, be it understood, not a specialist. Can you imagine any of our leading gardeners having blindly rushed in to accept the onerous position without having made themselves conversant with so prominent a part of it? Scarcely, one thinks.

Feeling, it is hoped, the absolute necessity of bringing as far as possible the whole curriculum of elementary training into bothy life, the question arises, How is this to be done? It is a simple question, but resolves itself into a compound one—viz., can a young man go far enough on his own initiative to cover all the necessary groundwork of his primary tuition, always supposing that some practice, however limited, is essential to a proper grasp of most subjects? Or, secondly, will his chief meet him half way in the matter, and with a friendly hand help our young journeyman to lift himself out of the even tenor of his course in order to fit himself for the front? To the whole question—Yes. But in many cases, and there is no reason why it should not apply to all, the advantages will have to be mutual—viz., to the benefit of both master and man.

Harking back momentarily to the life of a young recruit, it will be remembered that in a previous paper the necessity of making recreation subservient to work was placed well to the front. Supposing this to have been happily carried out, the earlier difficulties surrounding the efforts of a recruit will have long since disappeared, and what was really hard work will, to a journeyman, have resolved itself into a positive pleasure. Not only that, but it will now fit admirably into this more advanced stage. Our journeyman, as well as being body and soul in his appointed daily task, will take the keenest interest in all that is going on around him. To do this nothing is more helpful than daily notes in his diary—viz., notes of the whole routine of work from which his hand is excluded save his own particular phase of it. This can be done unobtrusively; a walk round of an evening, with a companion, if convenient, to chat over matters going on, is a pleasant and profitable method of grasping details. If this keen interest is taken, there is not, it is believed, a head gardener in existence who will not unbend from that reserve he may think it necessary to employ during the legitimate working hours and give his young men the opportunity to approach him for help and advice.

In the matter of wall trees, for instance, is there any "head" who would refuse to allow his young hands to take sole charge of, say six trees each, and this in their own time as a recreation? With, say, three in the bothy, that would be eighteen trees, or it might be that one length of wall could be divided among the young hands in sections. Such, or a similar system, which might be readily applied to other phases of culture, a length of herbaceous border possibly, could not fail to be of the greatest educational value to embryo gardeners, as well as of material assistance to him who is responsible for all—men as well as master; and, I take it, few head gardeners care or wish to divest themselves of the responsibility they undoubtedly have regarding their pupils. Here, too, competition amongst the young men themselves comes in, with its stimulative aid, besides a score of moral advantages contingent upon it. "Oh! this is all very well," some head gardener may say; "you don't know my lads." "Granted;" yet reasoning from what is known of the class to which they belong, with its grand reserve fund of high spirits and superfluous energy, that anyone should think it cannot be utilised for their advancement, for the good of all concerned, and for the glory of gardening, is probably as great a mistake, as it would be a matter for regret to—

THE OLD BRIGADIER.

(To be continued.)

Lachenalia tricolor.

CONSIDERING the little trouble entailed in growing this pretty and useful bulbous plant successfully, it is surprising they are not given a place in every collection. For an edging on the conservatory or greenhouse stage in early spring they are almost unique; and the peculiar combination of colours in the flowers makes them very conspicuous. About the middle of August is a good time for potting the bulbs, the largest and best ripened always being selected. The compost should consist of good loam three parts, leaf mould one part, pulverised cow manure one part, and a fair sprinkling of sand or mortar rubble.

The most serviceable pots are 5-inch, and they will need only a small quantity of drainage, covering it with a little of the rough fibre from the loam, to prevent the finer particles working down among the crocks. Five bulbs placed in each pot will be sufficient, and the soil must be

made firm. After potting stand the pots out of doors, and cover them with cocoa-nut fibre refuse or ashes till growth commences; they should then be transferred to a cold frame, where they will obtain abundance of air and light, as these are indispensable factors in producing the best results. If it is desired to have them in flower earlier, they may be placed in an intermediate house or heated frame, and should be raised as near the glass as possible, or the foliage will become drawn.

When the pots are well filled with roots, they will benefit by occasional applications of liquid manure or soot water; and it may be continued with advantage till the bulbs are almost ripe. After flowering, the pots should be placed in a cold frame in the full sun, till the leaves have completed their work and the bulbs are thoroughly ripe, when they can be stored away in a dry position till the time again arrives for potting.—*ASPIRANT*.

Forced Bulbs.

THERE are numberless bulbs annually consigned to the refuse heap, or otherwise wasted, which if taken care of and planted in bare places by the side of woodland walks and pleasure ground borders, would go far to render them at certain seasons the most attractive portion of the demesne. In no situation are plants of this character so attractive as when they are associated with woodland scenery, springing through a carpet of green grass, which shows them off to advantage. Planting in rows, as is generally done in beds, favours a formal appearance, but dotted about under deciduous trees or shrubby borders, encourages a much more natural aspect.

Although the bulbs may not produce such large flowers, or spikes as when planted in rich soil in the open, the deficiency is made up by the splendid masses they attain to when left undisturbed, as they can be in such plantations. In order to give them a fair start the soil should be broken up to a good depth, and some short well decomposed manure worked in at the bottom, which will add largely to their strength and vigour. A soil that is light and open is most suitable, and in this practically all bulbs will flourish and increase rapidly. There are places in all gardens that may be much improved and beautified by such planting, for if there is only a single shrub or specimen tree of any kind its beauty will be greatly enhanced by a few clumps of bulbs around it. Beds of Rhododendrons, Roses, and shrubberies are considerably enlivened, and the bulbs do very little harm.

Every care should be taken of the plants after flowering is over, owing to the tender state they are in from being subjected to heat, and the sudden transition therefrom. It is no uncommon thing to notice numberless bulbs of different descriptions thrust out into the open and exposed to cutting winds directly the flowers fade. The proper way to treat them is to stand the pots in a light airy position in a cool house or pit, and administer just sufficient water to keep the soil moist till they show symptoms of going to rest naturally, after which they may be placed in the positions assigned them.—*BRASSICA*.



Fruit Forcing.

Vines.—Earliest Houses.—In the very early started houses colouring will shortly be proceeding. Afford a thorough supply of tepid liquid manure and mulch the border at once with an inch or two thickness of partially decayed manure, preferably rather lumpy. The mulching must be sweet, then it gives a stimulus to the roots and secures healthy foliage. Damping should be continued until the Grapes are well advanced in colouring, after which reduce the moisture gradually, and insure a circulation of warm air day and night by regulating the ventilation judiciously. In most cases the thorough moistening of border at the time of changing colour will suffice till the Grapes are ripe, but there must be no lack of moisture, or it may cause the premature ripening of the wood and the loss of the principal leaves. The temperature should be maintained at 70° to 75° in the daytime, with a rise of 10° to 15° from sun heat, allowing the temperature to fall during the night to 65°, or even 60°.

Vines in Flower.—A circulation of warm, rather dry air, and a temperature of 65° to 70° at night for Black Hamburgh and similar varieties, and 70° to 75° for Muscats, facilitates a good set. Muscats and other shy-setting varieties should be brushed over with a camel's-hair brush about the time the blossom is fully expanded, so as to rid the stigmas of the caps and glutinous substance, choosing a warm part of the day after the house has been rather freely ventilated. The operation will render the flowers fitted for fertilisation, effecting this by brushing them over with a brush surcharged with pollen taken from free-setting varieties, such as Alicante and Black Hamburgh.

Disbudding.—The Vines in midseason houses will require attention, not attempting it, however, until the bunches appear in the points of the shoots, and then it ought not to be done in a hurry, nor a large reduction made at one time. Proceed gradually and with discrimination, so as to give as little check as possible to the Vines. Retain no more shoots than can have full exposure to light, crowding being a great evil. Allow for the due extension of the laterals, for on this depends sustained root activity till the crop is perfected.

Stopping.—Permit the bearing shoots to extend according to space. If this is restricted by the Vines being close, the shoot may be pinched at the first leaf beyond the bunch, and this should be done when the leaf is the size of a penny. When there is a moderate space between the rods allow two joints beyond the show for fruit. Where there is abundance of room let the shoots with fruit extend three or four leaves beyond the bunches before taking out their points. Laterals below the bunches may be rubbed off, except from the two lowest leaves, pinching them at the first joint. But laterals above the bunch may either be pinched to one joint or allowed to extend until the available space is covered or nearly so, then pinch, and keep them within bounds afterwards by stopping to one joint of growth as made.

Thinning.—Remove all superfluous and duplicate bunches before they flower. Setting depends on the good form of the bunch, and on its receiving the essentials of fertilisation. Free setting varieties may have the berries thinned as soon as they are out of flower, but Muscats and other shy setters should not be thinned until it is seen which berries have been properly fertilised by their taking the lead in swelling. Every berry should have room to swell without becoming wedged, and yet leave enough berries to insure the bunch retaining its form when cut.

Watering, Feeding, and Mulching.—Vines require very moderate supplies of water until they are in leaf, sufficing that the soil be kept moist, but when the leaves are full sized the evaporation from them is considerable, and from that time until the fruit ripens they must not lack water at the roots. The watering should be regulated according to the requirements—dimensions and formation of the border. A narrow border will require watering twice as often as one double the width, assuming the Vines to be equally extended and cropped, while a border of loose material will need water much more frequently than one formed of firm retentive loam. Due regard, therefore, must be had to the state of the Vines in relation to the rooting area and to the weather, as water will be required much oftener in hot dry weather than when cold and dull. The proper procedure is to examine the border, and when water is required give it abundantly. Surface dressings of artificial manures, such as those advertised, are of great benefit for the health of the Vines, and the swelling and perfecting of their crops. A dressing of about 4 ozs. per square yard may be given as soon as the Vines start into growth, another after the Grapes have been thinned, a third during stoning, and a final one when the Grapes commence the last swelling, or just before or when beginning to colour. Liquid manure acts more promptly, and may be supplied whenever water is required, taking care that it is not too strong, and is warmed to the mean temperature of the house.

Vines restricted to narrow borders will need higher feeding than those with large rooting areas, affording liquid manure whenever water is requisite, but it is well to change the food occasionally. A mulching of short manure, sweet and lumpy, such as stable litter freed of straw, about an inch thick, and added to from time to time so as to maintain that thickness, is excellent for ordinary borders, but those composed of light porous materials should have a mulching of well decayed manure, as it lies closer, and the roots of the Vines are attracted to it through its retaining moisture better and longer.

Late Vines.—If started in February or early in this month they will be swelling their buds and have all the growing season before them. Use the syringe twice a day, seeking to secure a good start by closing the house with a genial humid atmosphere, but not a saturated one, at a temperature of about 75°. The canes of young Vines having been brought to a horizontal position the buds will break evenly; if not depress the points still more. Bring inside borders into a thoroughly moist but not sodden condition. The outside border will be sufficiently protected by a fine tilth of soil, or if firm and close at the surface a light mulch of lumpy, partially decayed material will protect the young fibres from chill, and accelerate surface rooting while feeding the Vines. When lumpy and not more than a couple of inches thick it is of great benefit in preserving uniform moisture, while admitting of the free access of the sun's warmth and of rain and air.

Gardeners' Charitable and Provident Institutions

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

THE BEE-KEEPER.

Useful Spring Flowers.

IN recent notes a few shrubs and trees were mentioned as being ornamental, and when in flower beneficial to the bees owing to the pollen or honey they produced. It may be of interest to remind bee-keepers how necessary it is to be constantly planting a selection of the many useful spring flowers, which always prove interesting to the lover of a garden, while many of them in their season produce an abundance of honey or pollen.

It is now too late to plant bulbs, as the majority of these were planted last autumn, and with favourable weather will soon be in bloom. There is one exception, however; all bulbs that have been forced should be taken care of, and when properly hardened may be planted. We force bulbs extensively, and as a fresh stock is obtained annually for this purpose we make a rule never to destroy any. Our usual plan is to plant on the outskirts of the shrubberies, or under the trees in the grass. The machine is kept off these places until the tops have died down. Treated in this manner they yield an abundance of bloom, and some varieties increase at a rapid rate. Many thousands which would otherwise be wasted are planted each spring, with the result that what was previously rough grass or waste land is in its season bright with flowers.

Spring flowering plants are better if planted in the autumn, but owing to the wet weather that prevailed during the latter part of last year the work was in many cases delayed. It may be done at this season with every chance of success. Aubrietias, Arabis, and Wall-flowers should be planted in quantity; an open space ought to be selected, where they can obtain full benefit from the sun. Primroses in variety and Myosotis may be utilised in smaller numbers. A large breadth of Limnathes Douglasi should be planted; this is a dwarf growing plant much visited by bees. In the kitchen garden plant out in their permanent places the small plants that were raised last year of Thyme, Sage, and Borage; these are all excellent honey producers.

Condition of Stocks.

The temperature continues low, but with the advent of finer weather and sunny days an examination of all the colonies should be made. Bees, we fear, have not wintered well, as already there are reports to hand of serious losses. This is probably owing to late feeding, and the wet season followed by severe frost. It is therefore advisable to examine each stock, and make a note of its condition. This is easily done if each colony is numbered and entered in a small book, which may be carried in the pocket. This is the plan we have adopted for many years, and it is interesting as showing the condition of each colony in the apiary; it also shows the history and age of each queen, and is useful for future reference, and if properly carried out saves a great amount of labour in examining stocks.

If a colony of bees is in good condition at this date and well supplied with stores it will not be necessary to examine it again for at least two months. A stock, however, that is short of stores and weak in bees will require constant attention. Thus by looking at the number on the hive and comparing it with the book one knows at once which requires attention. If only a few hives are concerned it is not so important as when there are upwards of three dozen in the apiary.

If, on examination, stocks require feeding, it will be advisable to place a cake of candy over the cluster and cover up as warm as possible. It is still too early to use syrup. As the queen will soon be active patches of brood will be visible, and care must be taken in removing the combs that it does not become chilled. The less bees are handled at any time—but particularly during early spring—the better. Remove all damp coverings and replace them with those that are dry, clean the floor boards, and make all as dry and warm as possible. If there are any dead bees remove them, or they will encourage robbing.—AN ENGLISH BEE-KEEPER.

Trade Catalogues Received.

Barr & Son, King Street, Covent Garden.—Hardy Flowers.

J. Fison & Co., Ltd., Ipswich.—Fertilisers.

J. Peed & Sons, Roupell Park Nurseries, West Norwood.—Plants.



TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Sub-tropical Gardening (E. T. H.).—We know of no book exclusively devoted to this phase of gardening, but many excellent articles have appeared in the pages of the *Journal of Horticulture* on the subject. We will endeavour to arrange for one or two practical articles that will be of service to you.

Cypripedium insigne (R. W. M.).—This popular Orchid will thrive in the same pot for many successive years, even after the roots have become a mass, if plenty of water is given to it at the roots and over the foliage during the season of growth. The roots cling firmly to the pot, and in potting it is always wise to break the pot and leave the portions attached when placing the plant into a larger size. In potting this plant, which may be done early next month if it really needs it, you must fill the pot in which you are going to place it about half full of drainage, and the plant should be well elevated above the rim of the pot. The best compost is fibrous peat and living sphagnum moss in equal proportions, with lumps of charcoal or portions of broken pots freely intermixed. The whole of the decomposed material should be carefully picked out from amongst the roots without breaking them, and the new as carefully worked amongst them again.

Liliums in Pots (Tyro).—Do not remove the old roots from the Lilium bulbs if they feel plump and firm to the touch, but if dead or dying then remove them with a sharp knife. The plump, firm roots will, when planted, throw out lateral roots, and thus support the bulbs until new roots are formed direct from the bulbs. If the bulbs are flabby and somewhat withered, put them in a box and cover with cocoa-nut fibre refuse for a week or ten days before potting. Ordinary garden soil is not usually to be found good enough for growing Lilies in pots, and yours, we suspect, is no exception. Sound fibrous loam two parts, well-decayed manure one part, and good coarse silver sand another part, is necessary to grow those varieties you name to the best advantage. After potting place the pots in the cold frame, plunging the pots over the rims in coal ashes or cocoa-nut fibre refuse, and giving no water until the bulbs begin to grow. By that time the pots can be stood in the open air, and remain there until they flower or until the end of August, when remove them into the greenhouse.

Onions for Pickling (H. T. H.).—The Onion usually grown for this purpose is the well known Silver Skinned, though many persons now utilise the Queen, both being cultivated in precisely the same manner. The best system to adopt is undoubtedly that of the market gardeners, who turn over a piece of ground, bringing up a layer of the poor subsoil, and spread this 5 or 6 inches thick on the surface. This poor soil is made fine enough on the surface for sowing, and on it seeds are scattered broadcast, very thickly indeed late in the spring—the end of April or early in May. So lavishly is the seed used that the plants appear "as thick as grass." There seems to be just enough food in the soil to sustain them for a time, or in other words, sufficient for the growth of small bulbs only. The plants commence withering early, and we have seen the mass of "picklers" almost so closely packed together that the soil could scarcely be seen between them. After the bulbs are cleared off the ground is turned over again, bringing the better soil to the surface once more, and the land is in splendid condition for autumn crops.

Abutilons after Flowering (F. S. S.).—After flowering the plants may be cut down, and the young shoots will root freely if made into cuttings, and inserted in sandy soil and placed in gentle heat. The old plants should be repotted when they have made fresh growths about an inch long, reducing the ball about a third, returning to the same size of pot, keeping rather close, shaded, and syringing twice a day until they have recovered from the potting. Early in June they may be given the flowering pots, and stood outdoors in a sunny situation, where they may remain until late September, and then be taken under glass.

Spent Malt for Orchids (Constant Reader).—Some of the finest *Odontoglossums* in this country are grown on lattice stages over a lower stage of broken coke, and you will be well advised to grow your plants in the same way. Certainly you will gain nothing by plunging them in spent hops or malt. In all Orchid cultures abundance of fresh air to the roots is an important detail, and in none more than that of *Odontoglossums*. This you would prevent by plunging them in any material, and you will be wise if you leave it alone. Make your lattice stage so that it stands about 6 inches clear of the lower one, and cover the latter with broken coke or shingle kept constantly damp. If this is done, and other cultural details properly carried out, you need have no fears as to the result.

Impressions of Ferns (Journeyman).—You will find the practice of taking impressions of Ferns most interesting; we have seen some pretty pictures formed by tastefully grouping a number of different fronds on a sheet of paper. The fronds of which an impression is desired should be carefully pressed first, so that all the parts are flat and firm; then they can be placed on the paper, which may be secured to a drawing board, and pinned in position. This requires to be done with care, and if the fronds are moved during the process of stippling, imperfect representations will result. When the fronds are fixed the brush can be slightly moistened in ink, and the paper either lightly dotted with the brush, or the ink can be jerked on by a quick movement of the hand. Very little ink must be taken in the brush at one time, or a heavy and smudged out line will be obtained. Practice will soon enable you to manage this, and when several fronds are grouped to form a picture the effect can be greatly improved by a kind of shading, deepening the application of ink in some places and lightening it in others. The space covered is left white when the fronds are removed, showing their outline with exactitude when the work is well done.

Polyantha Roses in Pots (G. P. J.).—Both the climbing and dwarf varieties of *Rosa polyantha* grow and flower very satisfactorily in pots, indeed they are too tender to plant outside otherwise than in a sheltered situation. If your plants belong to the climbing section, you must either train the shoots up the roof of the greenhouse, or fix a long stake in the centre of the pot, and train the shoots to it to form a pyramid. Very little pruning is needed with this class of Rose, except removing all thin weakly looking shoots, and just the tips of the stronger shoots. If pruned too much they will fail to flower. The dwarf varieties too require simply the removal of weak shoots, and shortening of the stronger ones where necessary to form the plant into a good shape. After a year or two the growths will become crowded, and these must be thinned out by removing a few of the oldest shoots. After the plants have begun to develop their flower buds, top-dress the roots with a little well-decayed manure, and water once a week with the following stimulant:—1 oz. of guano, dissolved in a gallon of rain water. The plants will do well in the greenhouse, but care must be taken to avoid their being subjected to cold draughts. The treatment applicable to pot Roses generally will be suitable for the after-management of the *Polyantha* Roses. If you refer to the instructions which appear from time to time in these pages on Rose culture, you will find full details of any further information you are likely to require on the subject.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. W.).—The *Calceolaria* is possibly *amplexicaulis*, but it is impossible to say definitely. Send flowering specimens when you have them, and we shall be glad to assist you. (M. C.).—As we have stated before, *Crotons* can only be positively identified by comparison in a large collection. (S. N. B.).—1, A good form of *Dendrobium nobile*; 2, *Cymbidium Lowianum*; 3, *C. eburneum*. (T. C. R.).—1, *Bignonia triphylla*; 2, *Veltheimia viridifolia*. (W. F.).—1, *Dendrobium luteolum*. (W. C.).—1, *Phlebodium aureum*; 2, *Thibaudia acuminata*; 3, *Saxifraga granulata*; 4, *Primula denticulata*; 5, *Selaginella stolonifera*; 6, *Habrothamnus elegans*. (W. A. B.).—1, *Eriostemon scabrum*; 2, *Libonia floribunda*; 3, *Boronia pinnata*; 4, *Hederoma fuchsoides*; 5, *Hepatica angulosa*; 6, *Begonia metallica*.

Covent Garden Market.—March 21st.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
„ Californian, per case	8 0	14 0	Oranges, per case ...	5 0	15 0
„ Nova Scotian, barrel	15 0	22 0	„ Californian, seedless	16 0	24 0
Cobnuts per 100 lb....	80 0	90 0	Pears, Californian, case...	6 0	9 0
Grapes, black ...	2 6	5 0	Pines, St. Michael's, each	1 0	6 0
„ Muscat... ..	4 0	8 0			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Lettuce, doz. ...	0 10	to 1 2
Asparagus, green, bundle	5 0	5 9	Mushrooms, lb....	0 8	0 10
„ giant, bundle	15 0	20 0	Mustard and Cress, punnet	0 2	0 0
Beans, Jersey, per lb..	2 0	2 6	Onions, bag, about 1 cwt.	4 0	8 0
„ Madeira, basket ...	2 6	3 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz....	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, ½ sieve...	1 6	2 0	„ Teneriffe, cwt....	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz.	0 8	0 10
Carrots, per doz. ...	3 0	4 0	„ French, round, doz.	1 6	0 0
Cauliflowers, doz. ...	3 0	4 0	Seakale, doz. baskets ...	15 0	18 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bushel...	3 0	5 0
Endive, doz. ...	1 6	2 0	Sprue, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs. ...	4 6	5 6
Leeks, bunch ...	0 8	0 0	Turnips, bunch... ..	4 0	6 6

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ferns, small, 100 ...	4 0	to 8 0
Arbor Vitæ, var., doz. ...	6 0	36 0	Ficus elastica, each ...	1 6	7 6
Arums, per doz. ...	8 0	12 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Boronia, doz. ...	20 0	24 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Crotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	6 0	8 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	0 6	1 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz....	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	8 0	18 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	„ specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mimosa, per bunch ...	1 6	to 2 0
Arums ...	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Asparagus, Fern, bunch...	2 0	2 6	Narcissus, white, doz. bun.	2 6	3 6
Bouvardia, bunch ...	0 6	0 9	„ Yellow, doz. bunches	2 0	3 0
Carnations, 12 blooms ...	2 6	3 6	Odontoglossums ...	5 0	7 6
Cattleyas, per doz. ...	10 0	12 0	Pelargoniums, doz. bnchs	8 0	12 0
Daffodils, double, doz. bnch	6 0	8 0	Roses (indoor), doz....	6 0	8 0
„ single, doz. bnch.	6 0	12 0	„ Red, doz....	6 0	8 0
Eucharis, doz. ...	2 0	3 0	„ Safrano, packet ...	3 6	4 0
Gardenias, doz. ...	6 0	8 0	„ Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			„ Yellow, doz. (Perles)	5 0	7 6
bnchs. ...	6 0	9 0	„ Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	5 0	6 0	„ English (indoor):—		
Lilium Harrisii, 12 blooms	6 0	8 0	„ La France, doz. ...	6 0	12 0
„ lancifolium album ...	3 6	4 6	„ Mermets, doz ...	3 0	6 0
„ rubrum...	3 6	4 6	Smilax, bunch ...	5 0	6 0
„ longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch.....	0 6	0 8
Lilac, white, bundle ...	4 0	6 0	„ yellow, bunch	1 0	1 6
„ mauve, bundle ...	6 0	8 0	„ bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	„ dark, French, doz.	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	„ „ English, doz.	2 0	3 0
„ Yellow, doz. bnchs.	4 0	6 0			



Foot and Mouth Disease.

AN outbreak of this disease on the borders of Suffolk and Norfolk on January 29th, followed, as it has been, by six other outbreaks in the same district, is matter for great concern on the part of breeders of stock. Farmers who have experienced an outbreak of this complaint amongst their ewes at lambing time, or amongst their dairy cattle, will be able to give graphic details of the great loss and

annoyance caused by it, and will be able to impress upon the younger generation a wholesome dread of a return of such a visitation.

That it is a very contagious disease there is no doubt, but we do not think it is conveyed by the air. Thirty years ago we were upon a farm that for three years was rarely without a case of foot and mouth. No breeding herd was kept, but store cattle were bought as required in Yorkshire markets. During the time that the disease was so prevalent every animal purchased was treated as being a probable patient, and very few escaped. The autumn months were those during which the principal purchases were made; the animals were placed in one of two yards separated from the main farm premises, and used as hospitals or, rather, sanatoriums, for many of the cattle were suffering from the disease when bought, and already past the worst stages.

As they became convalescent they were disinfected and drafted off amongst other cattle. Half a dozen milch cows were kept on the main premises, but these never took the complaint. A flock of ewes was lambed every year in one of the hospital yards, after the latter had been cleared of cattle and manure for some time, and no outbreak of foot and mouth took place amongst the ewes, so it is fair to suppose that the contagion is not so very easily conveyed, and may be avoided with reasonable care. For either two or three seasons lambing was proceeding, and foot and mouth disease existent within a radius of 100 yards, yet no evil effects befell the ewes. The only safeguards used were disinfection of appliances, both permanent and movable, and prevention of all communication between cowman and shepherd; to aid the efficiency of the latter precaution a separate cake supply was provided for each.

Farmers in other parishes were not so fortunate, and where the disease attacked a breeding flock very serious loss was incurred. On some farms the greatest loss was from abortion, induced during the later periods of pregnancy, whilst many old shepherds have vivid recollections of the almost heartrending experience they had to struggle through when lambing began. The loss in the case of the dairy cow arose from the diminution of the milk supply, which would almost cease, never to be even nearly regained in convalescence.

Fatal results were not to be feared in cases of cattle over a year old, but calves were difficult to bring back to a state of health if seriously attacked. For the information of those who have not been familiar with this disease, the symptoms are lameness, caused by inflammation in the hoof, and frothing and running saliva, caused by a similar state of thing in the mouth; the latter symptom is generally noticed before the lameness.

The disease is simply a fever, and is caused by a bacillus, but whether it can be induced by a state of low nutrition, accompanied by overdriving and insanitary conditions, has not been proved, though many people believe it can be. At any rate, when the epidemic was at its height it found genial soil for development in the droves of store cattle brought long distances and badly fed, whilst being mercilessly driven from market to market. Our experience in treating the disease teaches the adoption of a negative policy, except in the case of very young animals. Older cattle will go through the stages of the complaint best if they are let alone. Cleanliness and ventilation must be attended to, but little else need be done. For a few days, when the complaint is at its height, the animal will have little desire to eat, and should not be forced. It should have a small supply of finely crushed linseed cake within reach, and also a little very soft hay. This is the first thing the beast will fancy when it has got a turn for the better, and the disappearance of the hay may be taken as a symptom that the worst is over. As soon as he is better he will amply make up for lost time as regards eating. In cases of great debility oatmeal gruel may be given, but only in cases of real necessity, for the use of the horn must have a very irritating effect on the mouth. Recipes to aid the curative processes of Nature are:—

"Honey, 1 lb.; muriatic acid, 1½ oz.; mix them well. Apply a small dessertspoonful to the tongue three times a day, leaving the animal to distribute it over the mouth by the champing motion which is sure to follow its application."

"For the feet, take aloes ½ oz., rectified spirit ½ pint, alum ½ oz.; dissolve them in 1 pint of water; mix, and apply a little twice a day between the claws.

Hyposulphite of soda is a good thing, 4 ozs. being given dissolved in water to each animal twice a week.

We are glad to notice from the latest reports that there have been no further cases, and hope that the outbreak may soon be stamped out. Surely it cannot be necessary to go to the extremity of ordering compulsory slaughter. Our view is that sufficiently stringent isolation and disinfection should be efficacious in preventing the spread of the disease. Local authorities ought to have full discretion as to deciding upon slaughter or otherwise; but the burden of enforcing the regulations as to isolation should also rest on their shoulders; the rules should be very stringent, and local inspectors be made responsible for any laxity.

Show Prize Money.

Looking carefully through the prize lists at the recent horse shows we are struck with the fact that such a large proportion of the prizes, especially of the leading prizes, goes into the pockets of men of great wealth. Naturally this is only to be expected, for many of the animals are purchased for large sums from the breeders expressly with a view to winning these prizes. That such ambition on the part of wealthy men does much to encourage breeding is obvious, but we must confess to a feeling of satisfaction when we see the name of a tenant farmer occupying the place of honour in connection with an animal of his own breeding.

Work on the Home Farm.

We are enjoying beautifully dry sunny weather, and prospects of spring work are much brighter. Here and there we see a drill at work, but have seen nothing very satisfactory in that line yet. Wheats are looking well though backward; there has been little loss of root, and the large rain and snow falls have solidified the land and almost done away with any necessity for rolling. Now the surface is dry, however, the two-horse Cambridge roll taken over the ground once will do good and prepare it for a good harrowing. With a full plant and some to spare it is always good policy to harrow Wheat; on light soils, where weeds are numerous, harrowing is almost a necessity, and should be done in February. This was quite an impossibility this year, but now the land is dry it should be done at once.

The Mangold crop has proved so valuable this year that we doubt not that a larger area will be sown this spring. In six weeks time the seed should be sown, and as a good mould is most essential to the germination and successful growth of Mangold steps must be taken at once to prepare the ground; for this crop succeeds best on heavy or even strong soils, and such are not now in a very promising state. The land must be worked at once with the cultivator, rolled, and, if there is any twitch, it must be harrowed out, then rolled and harrowed again. If the land be clean, as it should be for Mangold, drag and roll, then harrow and roll, wait a few days, and repeat the process, always leaving the surface as smooth as possible to avoid loss of moisture. It is quick drying that makes clotty surfaces. If the land has thus been deeply stirred in March and the surface kept close it should plough over in a nice mellow condition by mid-April. This is a grand time for planting Potatoes, and farmers who cannot get on with Barley sowing are glad to get their Potatoes put in.

We again urge our friends to sow their Clover seeds after the corn drill; there is no other sure way of getting a good plant of seeds. When the seeds have been mixed do not put them into large sacks but into small parcels, for if put up in big lots the heavy seeds are apt to gravitate to the bottom before they reach the field; thus if care is not exercised Clovers may be sown alone in one part of the field and Ryegrass in another.

Lambing still proceeds satisfactorily, the only drawback being scarcity of spring keep. Happy is the man who has a good plot of Kale.

IRISH OR AMERICAN BACON.—The inspector of the Bacon Curers' Association has been making his presence felt in Dublin lately. On Wednesday last a very important case was heard in which the large firm of Messrs. Williams & Co., Ltd., were summoned at the suit of the Association for having sold an American ham as Irish. The police magistrate (Mr. Mahony) took a very severe view of the case, and imposed the maximum fine of £25, with £5 costs, and stated that if any more cases of the kind came before him he would use his powers and give a sentence of imprisonment without the option of a fine.—("Rural World.")

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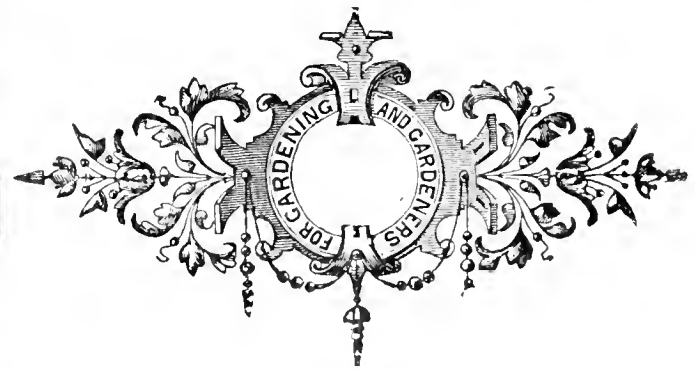
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The New Chiswick.



HOUGH I have not seen any remarks on the subject, I have heard of a literary agitation relative to the procedure of the Council of the Royal Horticultural Society in securing a site for a new national garden. Possibly the notification of Mr. Wilks on page 244 may not be entirely unconnected with such agitation, while some of the allusions of a correspondent on the following page may have reference to the same important matter.

If, as "A. D." appears to suggest, there has been any sort of clamour for the disclosure of propositions and negotiations on the subject of land purchase, or of taking a plebiscite of the Fellows as to diverse lines of action—for diverse they must inevitably be in such a contingency—it is not easy to imagine anything more calculated, if not to defeat, at least to prejudice, the efforts that are being made to do the best that can be done in providing what is needed for meeting the object in view, and at the same time safeguarding the resources of the society.

The Council of the Royal Horticultural Society is elected by the Fellows to initiate the policy and transact the business of the society generally; and in respect to the great change now in progress—a change rendered inevitable in the nature of things—the governing body has been specially authorised to take the necessary steps in accordance with the desire of the Fellows assembled at the general meeting. That the council as an administrative body is acting within its legitimate powers is certain, and great as these powers may be, and serious and far-reaching the action taken or in progress, it can scarcely be less certain that the several members recognise to the full the corresponding magnitude of their responsibility. This being so, they may be trusted to act warily and to consider very seriously every step taken in the execution of the extremely important mission entrusted to their judgment.

To be shackled in the formulation of plans and

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the preparation of a definite proposition would obviously be most disadvantageous, and, in fact, such a great hindrance as to be almost certain to lead to a breakdown; indeed, it is not conceivable that any official body of competent men would consent to act in a case of this nature if they were to be hampered by irresponsible criticism and the inevitable "confusion of tongues."

The present council is composed of distinctly representative men—business men, scientific men, and practical men—of proved administrative ability, with the result that the society is in a more flourishing state than it has been for many years, and enjoys a markedly larger share of public confidence. If such men do not know what is required, and of the means necessary for meeting the requirements, it would be difficult to find any outside body who could be more safely trusted. Yielding to clamour a council once did humiliate itself by the formation of an advisory committee, or something of that kind, to guide it to right decisions, and a few estimable gentlemen enjoyed for a short period the luxury of possessing power without responsibility. It was a lofty exaltation, no doubt, and a distinct novelty. Happily the advisers were not vain, but honestly, if not obscurely, strove to be useful. Still, it is extremely doubtful if the present council will make a similar confession of incapacity. No, it must have the courage of its convictions, disclose its plans when completed, and issue its recommendations; then, if these are rejected, be content with a vote of thanks for its endeavours, and recede into dignified retirement.

The particular site for the new Chiswick must naturally be a question for wonderment. To get beyond the smoke radius, not at the present time only, but for generations to come, the site cannot be within fifteen miles of London. It would not be easy to find a safe from smoke neighbourhood of suitable altitude, good soil, and direct railway connection within that area, so rapidly are building estates being mapped out and covered with dwellings. Besides, just for that reason, the nearer to "town" the more costly the land. The chosen site may therefore be even much farther afield.

We are told by Mr. Wilks that several positions have been inspected, but that one remains to be investigated. As I do not happen to live very far from one particular site I cannot be either blind or deaf to what passes around me. It may not be the one to be eventually selected, but if it should be it will, I am inclined to think, meet "A. D.'s" ideal of a "lovely country, excellent soil, pure air, sunshine, and shelter." To reach this particular rendezvous he would have a quick and pleasant run down, and find it a place in which to spend a "happy day."

Allusion is made to a possible co-operation of county councils in the great undertaking in question. Though the suggestion may not receive unanimous approval, still, on reflection, it is not unlikely to recommend itself to a majority of practical minds. Several county councils are in full sympathy with the work of the society, and some of them give a goodly share of support to horticultural teaching in some of its aspects. The London County Council gives an annual grant for the teaching of vegetable and fruit culture in the pleasure grounds of a London park. It is a curious idea, no doubt, but it shows the desire of the council to be helpful in the direction indicated. It is entirely appropriate that it should be, seeing that London is the greatest consuming centre of garden produce in the world. Nor would it, obviously, be less appropriate for the corresponding authorities in the several counties of supply to share in similar educational work. An arrangement on an equitable basis might be of an enormous advantage to the country, as the greater the means at disposal the greater would be the power for good of a competent administrative body, and this above all others is indisputably the Royal Horticultural Society.

The site referred to would afford scope for establishing the finest horticultural station in Europe. It is hoped "the new Chiswick" will be based on the broadest possible lines, and the procedure in it capable of doing the greatest possible good in various ways to various classes of the community. In a word it should be the recognised seat of national horticulture, and a worthy centenary memorial of the Royal Horticultural Society.—A FELLOW.

Cinerarias.

IN continuation of my subject, of which the opening notes appeared on page 250, I may say that if there be any difficulty in obtaining cuttings, cut down the selected plant after flowering, remove the old soil, place the stool in some shady spot, and cover it with leaf mould; in a few weeks one may expect to find cuttings in abundance. The stool should be saved, all shoots except three or four being taken from it, and straggling roots cut back. Then place the plant in a 5-inch pot, and it will make a fine specimen.

After midsummer, whether the plants are from seeds or cuttings, they should be growing vigorously. Water them cautiously, and when a supply is requisite give a thorough soaking. In my opinion many failures occur through injudicious watering, for though Cinerarias are at this period moisture loving, they are most impatient of an overdose; if the plant is once allowed to become waterlogged, it is a difficult matter to again get it into a healthy state. As Cinerarias are quick growing and free rooting plants they must not be allowed to remain in the pots they now occupy until the roots become matted, or in anything approaching a root-bound state, or they cannot afterwards be induced to progress freely; consequently, when the soil is filled with roots transfer the plants to their flowering pots.

At this final potting some decayed stable manure should be added to the soil, and the pots must be well drained; this is unquestionably a point about which growers cannot be too careful. If it is necessary to use the lights after this potting they should be tilted both back and front, so as to allow the admission of plenty of air, and may be removed at night, as the dews will greatly benefit the plants. Always keep the material damp on which the pots are standing during the summer, and syringe the plants in the afternoon. When the roots have taken properly to the soil, give weak liquid manure at alternate waterings.

In the cultivation of Cinerarias it is necessary all through the several stages of their growth to allow the plants sufficient room to prevent legginess, for should this occur, the large bottom leaves, which add so much to their appearance, and are usually essential to a strong vigorous condition, are sure to die before the time of flowering. Immediately there is any danger of frost the plants must be removed to where it cannot reach them, but they should not, if avoidable, be stood on dry shelves or stages, as they dislike an arid atmosphere. In the event of such being the only position at command it will be found good practice to spread a layer of clean moss on the shelves, as this would do much towards keeping them free from insects, and preserve the lower leaves; or failing this it will be necessary to sprinkle the shelves every morning. If this be carefully attended to there will be little trouble from green fly. In a temperature of about 45° or 50° the most advanced plants will come into flower early in the new year, and those showing a disposition to be later will do with a temperature 5° lower. Growers who have what I should call a retarding house, can do much to lengthen the display from the one sowing.

With regard to insect pests, green fly is undoubtedly very troublesome, but it can easily be exterminated by timely fumigation or vaporisation. The greatest trouble in connection with this pest is when the plants are associated with others in a collection, but like other difficulties it can be overcome. The worst trouble is, in my opinion, the grub of the Marguerite Daisy or Cineraria fly, because it is an unseen enemy and cannot be detected until they have commenced their ravages. The grubs bore their way between the upper and under skins of the leaves, eating the fleshy portion, and thus creating a maplike formation. The best and practically the only way of destroying these grubs is by squeezing them between the thumb and finger. A little practice will soon enable anyone to discover the position occupied by the grub. There seem to be several broods of this pest, and it is therefore particularly desirable to kill the first, or the vitality of the plants will be seriously affected as well as the appearance spoiled. Thrips and red spider are sometimes troublesome, but this should rarely occur if the Cineraria receives the treatment advised.—W. H. DAMERELL.



Odontoglossum elegans Eastwood Park Variety.

AMONGST the most attractive Orchids in the Drill Hall on March 13th was *Odontoglossum elegans* Eastwood Park variety (fig. 70), which was exhibited by Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, who also contributed the typical *O. elegans* for comparison. The Orchid Committee showed its appreciation by recommending a first-class certificate. The flower was better in every respect than the typical form, which, as is well known, came from a cross between *O. Halli* and *O. cirrhosum*, and evidences of both parents were perceptible. The prevailing colour was delicate rose suffused with yellow, and there were numerous large and small chocolate brown spots. This flower was much admired by the visitors on the date named.

Clare Lawn.

DURING the past few years the popularity of Orchids has made very material strides as well in the actual number of collections as in the immense improvements that have been made in existing ones. Throughout the country there appears to have arisen amongst enthusiasts a desire, not perhaps to numerically increase their stocks, but to secure a higher average of quality. They have tried plant after plant, and every one that has been found wanting has had to go, possibly to the home of some younger and less aspiring cultivator. That this fashion—if such it may be termed—will be maintained is more than probable; indeed, the chances are decidedly in favour of its doing so, for Orchids are essentially flowers that grow upon one. The more Orchids anyone sees, the more eager that person becomes to see others, and in this at any rate familiarity does not breed contempt, but rather increased respect. Then, how seldom does one hear of a gentleman giving up Orchid cultivation entirely. Many collections have, it is true, been distributed; but it has almost invariably been by reason of the owner's death.

The love for Orchids has on occasions been termed a "craze," and if the term be accepted then it is a craze to be fostered, for it worships at the shrine of some of the loveliest flowers in the floral kingdom. One may find in the Orchid family every type of beauty, from the most brilliant to the most exquisitely delicate; every form of flower, some quaint, some formal; every habit of plant, including those that luxuriate on pieces of tree stem with others whose wants demand soil of some particular sort. Who would not glory in a "craze" which every year brings fresh beauties and fresh interests? Hybridists, professional and amateur, are ever at their labour of love, and the products of their patient skill are always being sought for. Many never see the outside of the establishment in which they are raised; but when one does come forth that is of superlative excellence what a furore it creates, and how eagerly it is sought by the enthusiasts to enrich their collections. But this is somewhat of a digression.

In the forefront of those whose Orchids have advanced by leaps and bounds stands Sir Frederick Wigan, Bart., Clare Lawn, East Sheen. Here quality has ever been placed before quantity; at the

same time a considerable number of houses are required to find accommodation for the whole collection. Additions are made with steady persistence, but they are largely of something "out of the common." The consequence of this spirit of maintenance is seen in the excellence of the majority of the flowers, and, failing the flowers, the names on the labels tell many a tale. Numerous are the hybrids that have gravitated to Clare Lawn, and have stayed there not to degenerate in health, but to grow and delight their owner and the grower, Mr. W. H. Young.

For some considerable time the writer had looked forward to this second visit to Clare Lawn, and a few days ago an opportunity was promptly seized. It is practically five years since the first journey was made, and much pleasure was derived from it, but more came from that of last week. The general stock shows very evident improvement in condition, this being evidenced in the magnificent leafage of almost every plant, and in the flowers of many of them. The *Phalænopsis*, which have been so remarkably well exhibited at the Drill Hall this season by Sir F. Wigan, were practically over, but their condition spoke volumes for the suitability

of the structure containing them and the treatment to which they are subjected. They are not plants that thrive in every place, but at Clare Lawn they are perfectly at home. The leaves are of wonderful substance, and visitors who saw the flowers at the meetings need no assurance of their excellence. There still remained flowers of *amabilis*, *Boxalli*, *Sanderiana*, and *Luddemania* with one or two others.

One of the most attractive houses is unquestionably the rock fernery, where on bold projections are accommodated huge *Cymbidiums* in pots. These plants amidst the green of the Ferns form a most delightful picture, and one which would elicit admiration from everyone. There are several varieties of *C. Lowianum*, including concolor, and all the plants are in immense pots. The majority of them are producing considerable numbers of spikes, two that were closely observed having fourteen and twelve respectively. The flowers are not yet expanded, but one may easily paint a mind picture of their appearance when at their best. In another house the handsome, though not frequently seen, *Cymbidium*

Hookerianum was flowering, with *C. eburneo-Lowianum*; while in a third structure the chaste *C. eburneum* was producing its fragrant flowers.

As in most Orchid establishments *Odontoglossums* are fairly numerous, but they do not form a feature as is frequently the case. Needless to say there are many species, hybrids and varieties represented from which are obtained spikes of variously coloured and formed flowers. The peculiarly habited *Dendrobium Kingianum* is flowering profusely, as are several *Masdevallias*. Growing in cool quarters are several plants of *Cypripedium bellatulum*. This handsome Orchid is usually found in a much warmer structure, but evidently appreciates its present place. The growth is of course slower than under the customary method of culture, but the leaves are clean and of great stoutness. Needless to say the plants do not get a great amount of water during the winter. The white form, *C. b. album*, is not in the same house, but is given a position in one of decidedly higher temperature.

A singularly beautiful Orchid that one finds under at least two names is *Angraecum modestum*, or, as it is frequently designated, *Sanderianum*. At Clare Lawn both names are represented, and under the former it is at present flowering. The pure white flowers borne on the long spike, as shown in the illustration (fig. 71) on page 263, are most attractive, especially when mentally compared to some

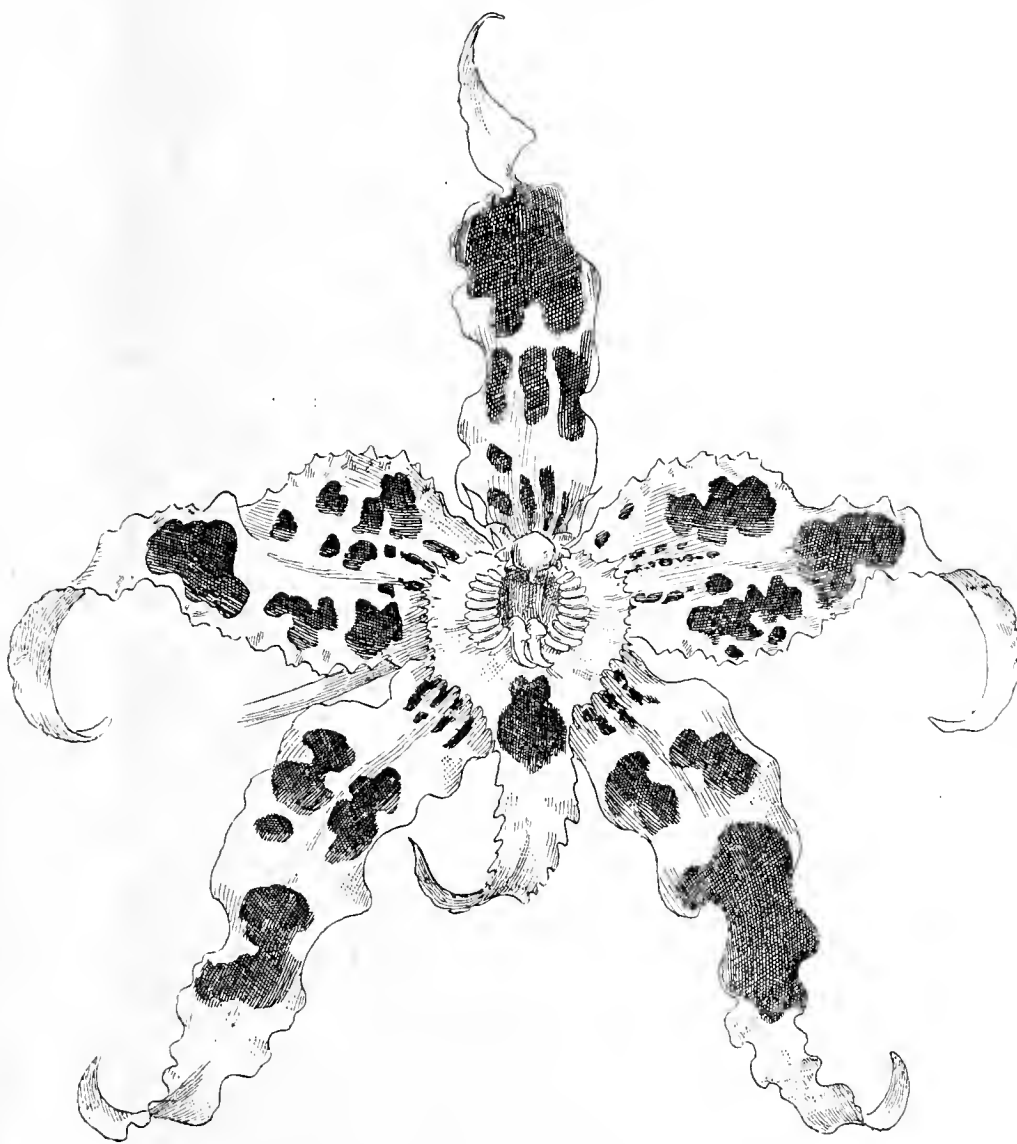


FIG. 70.—ODONTOGLOSSUM ELEGANS EASTWOOD PARK VARIETY.

of the larger flowered *Angræcums*. In the same structure too, was observed *Angræcum* (*Aëranthus*) *Leonis*, whose flowers also are white, but of different form from *A. modestum*, as well as being produced in an entirely dissimilar manner. These are two Orchids that might advantageously be far more frequently seen in good condition. The once comparatively scarce but now extremely plentiful *Dendrobium atro-violaceum* is seen producing numbers of its quaintly formed and coloured flowers. *Vanda gigantea* is not commonly met with in flower, and neither in the habit of the plant nor the beauty of its flowers can anything be found that is probable to bring it into the forefront of popularity.

Dendrobiums barbatulum, *superbum giganteum*, and *Wardianum* play a prominent part in adorning the houses, the last named especially looking particularly handsome. *D. Wiganæ* is not at this moment in flower, but the magnificent growths the several plants are making promise an abundant display of flowers in due season. Like the foregoing, *D. Victoria Regina* is not flowering, but its blue blooms will doubtless come at the proper time. *D. spectabile*, which created quite a mild sensation at the Drill Hall when shown some few months back, is in evidence so far as growth is concerned, as, needless to say, are many others of this charming family. An attractive variety is *D. Sibyl superbum*, whose rose coloured flowers show themselves conspicuously amongst the other occupants of the structure. A plant of Wigan's variety of *Spathoglottis aureo-Veillardii* has been in flower continuously since October, which says much for the attention that is given to the plants. The flowers of *Lælia cinnabarina* are always appreciated in an Orchid house simply because of the distinctness of their colour.

Clare Lawn has been justly famed for its splendid *Cœlogyne pandurata*, which with some growers is decidedly "miffy." Mr. Young has, however, been singularly successful in its culture, and has been able to exhibit to the interested visitor some grand spikes. This year, unfortunately, the plants show signs of failing, and the grower's efforts will have to be concentrated upon them to endeavour to bring them back to the health and strength that have hitherto characterised them. *Tricopilia suavis alba* demands a moment's notice by reason of its boldly handsome flowers: as also does *Epidendrum Stamfordianum*, on account of the peculiar colour of the blooms, and of the habit of producing them. *E. xanthinum* deserves a word in passing, as also *E. Wallisi* and *E. Endresio-Wallisi*, the latter having three distinct sets of growths, each of which is flowering. Numerous bigeners, in the form of *Zygocloax*, find a place, and are apparently in the best of health—indeed, the latter attribute is a feature of nearly the whole of the collection. The hybrid *Phaius Norman* in variety and *Cooksoniæ* are handsome, and find many admirers.

Of the excellence of the collection of *Lælias*, *Cattleyas*, and *Lælicattleyas* it would be impossible to speak too highly. Every effort is made to maintain its standard, and many are the superb forms that it includes. There were not great numbers in flower, but scores of sheaths were readily observable, and will perform their share in beautifying the houses at a later period. One plant of *Cattleya Schröderæ* had fifteen flowering growths, while *C. Trianae* was much in evidence. But it is impossible now to name more of these, or of the many other Orchids that were seen; they must form the theme for a further tale that it is hoped will not take another five years in the telling.—ORACHE.

Freemasonry of Gardening.

(Concluded from page 225.)

SOME delicate matters there are, probably this is one, requiring more subtlety than a gardener's pen is invested with to place them properly on paper, "for many a shaft at random sent finds aim the archer little meant," but the feeling obtains that an opportunity is now offered to do so, as well as some reasons for it. Young travellers, like young gardeners, have something to learn, and possibly a hint may be taken in the spirit in which it is offered and bring them in closer relationship to the great and happy family. In the first place we may take it as an accepted fact that the traveller shows his interest in the welfare of gardeners and gardening by subscribing to the Gardener's Royal Benevolent Institution. That his firm may do so is another matter. It is personal interest which will afford him the opportunity of showing he is desirous of companionship with The Order which means so much to him. Why should he not, also, carry this gospel of benevolence among the heathen—viz., those of little faith, selfish instinct, or whatever deters them from linking themselves to this noble institution? To think of what it is doing for gardeners, and to think of what it might do if every gardener, from the pound-a-week

one upwards, loyally supported, must be the writer's justification for firing another shot into the trenches of prejudice or phlegmatic indifference. Travellers, pray; carry this gospel with you in your wanderings and preach it with all the force of that great eloquence you are especially gifted with.

Most travellers will admit that if they are not always fervently welcomed they are seldom denied common courtesy, though perforce of circumstances the gardener may be placed in he is not only told that gardening is "going to the dogs," but that it has already arrived there. From this canine point of view things are bad, could not, in fact, be worse, but fairly and honestly how do matters really stand? Within a local radius of five miles it is easy to select a dozen gardens which are annually visited by half a dozen representatives of as many firms seeking orders it is utterly out of the gardener's power to give; and still they come; or if occasionally one drops off in disgust a stranger steps into his tracks. Now and again the proprietors of these gardens may give small orders for trees, shrubs, or plants, which the recipients will, perhaps, tell you are comparatively worthless, and which you can well believe, for what are they among so many. Apart from this each place draws its regular supplies from its own particular source, the business being done by post or personally in the shop. All this should account for something in the decadence of gardening from a trade point of view. What a pleasant and goodly thing it is to meet a traveller who values men for what they are and not for what they have! It brings them as once within the charmed circle of the gardener's free-masonry. "I know you cannot now give me an order, but I could not refrain from calling on an old friend for a chat." This is grateful and comforting. Yet, again, there are some in which the commercial spirit enshrouds all else.

Does a gardener ever realise how much he owes to his "Missus?" Possibly not; such things are taken as a matter of course. There is no phase of life in a world of work in which the wholesome influence of man's helpmate permeates with greater force than in gardening, if there are any in which it does so much. Go where you will, or when you will, at the eleventh hour or any other hour, a gardener's friends will find themselves friends of his "Missus;" his work her work, but her work her own. She is a striking though unobtrusive personality in the freemasonry of gardening. Genially sympathetic, eminently hospitable, loyally helpful. Gardeners' visits are not, indeed, like angels' visits; they have a knack of "dropping in" at unpropitious times, or what might be regarded as such elsewhere. "Oh! never mind your boots." The easiest of easy chairs is pulled out, and "What do you think of the Wardianums?" Whilst ever and anon "the Missus" provides a missing word, which neither can think of, and the cheerful chink of china has mingled with words of welcome.

The gregarious instinct of gardeners is a feature with its faults. The "cuckoo gardener," a peculiar variety of the species, appears to be the chief, but not the only culprit in this direction. Until coming within the environs of what for present purposes may be called Suburbia-super-Mare deponent had never heard the appellation, so possibly it is merely local. The "cuckoo gardener," though of the smaller kind, being chiefly single-handed, is one of the best of good fellows, as well as an excellent workman, often producing specimens of culture which would be highly creditable to men and places of higher pretensions. Certainly he is prone to much talking, and thinks no little of himself. Sunday is his great opportunity for visiting, and he makes the most of it. No harm in that. But when represented in flocks, the visit is embarrassing even to "the Missus." So much is this the case that the edict had to go forth, "not at home on Sunday."

A man of mystery may go into the pillory of print without compunction. When first seen he was taken for a gardener, having all the appearance and much of the impedimenta pertaining to the craft, including a goodly houseful of olive branches. He then managed a fairly large garden, and seemed to manage it fairly well. The next time, when seen, he was "out," walking the streets of a big city as an inspector of buildings, he said, when asked what he was doing; a facetious attempt to make the best of a failure. Nothing coming in; all going out; wife and bairns lodged in a back street. Oh, the pity of it! One cannot add much beyond saying, "The quality of mercy is not strained," nor was it then or upon a subsequent application by post, after which he disappeared. Several years after, the wheel of fortune had spun round, and the writer was—well, a bit down, the man of mystery up, when he called in all the glory of five clothes, massive gold chain, and sundry gewgaws disposed about his person. "You don't know me?" "No, sir, you have the

advantage of me." "You recollect so-and-so?" It all came back like a flash. "And where are you gardener now?" "Oh! I've left gardening for good, I'm —, a splendid position. The gentleman who put me on my feet wants some plants, and hearing you were here I thought you would give me some." He was wrong, the superb air of supercilious arrogance accompanying the beggar's petition would have frozen any channel of mercy, and the man of mystery passed out of our garden and our life into another world, between which and the gardeners' freemasonry there is a great gulf fixed.

The gardeners' stock exchange is a prominent feature in the freemasonry of the order. The biggest beggars on earth, they have been called. It seems to be a rule of the fraternity never to visit any

the gardener's pocket in the shape of carriage by post or train. Little amendments are wanted here—in both these phases. "Your gardener has wonderfully improved the place; quite a nice little collection of hardy plants." "Yes; those are G——'s forte." A growl from G—— after the above few words from his master revealed the fact that not a thing had been bought. Love, not money, was forming the collection; and if ever "The Master" gave the matter a thought, it probably went no farther than Topsy's hypothesis of spontaneous generation, "Specs" they "grewed."

In the glamour of the long ago lies some of the happiest recollections of visits paid and received in the little kingdom of bothydom. It was the writer's initiation into the freemasonry of gardening—that



FIG. 71.—ANGRÆCUM MODESTUM. (See page 261.).

place without bringing some bit of the vegetable kingdom back. Bits, scraps, cuttings, eyes, roots; the business done is enormous, the profit to the garden incalculable, although the giving side and the taking side of our ledgers remain evenly balanced. Many lovers of their gardens know this, and enter fully into the spirit of the thing; but others there are, in not understanding may misunderstand, and, consequently, question the sterling honesty of purpose which rules the gardeners' stock exchange. Simply exchange; that "it is more blessed to give than to receive" enters not into the bargain, for, as a matter of fact, pure selfishness prompts the transaction; but it is selfishness in which self is lost sight of in the love which each bears for his own little domain. Services thus mutually rendered are for some inexplicable reason often secret services, whilst most have little sacrifices attached drawn direct from

good camaraderie, which one is never too young to join or too old to enjoy. Well do we recollect that particularly Good Friday, when the lads of — Gardens trooped over to our at home. After a look round, during which our visitors' criticism seemed to amount to everything being just a little better or a little earlier with them, although we beat them by points in exhibits that year, we all adjourned at a given signal for tea—high tea, of course, in spite of the fast day. "Two cups short (a common trick with bothy china) here, a saucer 'll do for you, and I'll put a cork in this flower pot for myself; and, crowning triumph, though unheard of extravagance, a special pot of marmalade, which, to our disgust as hosts, absolutely refused to go round ere the spoon scraped on its thick deceptive bottom. More discussion upon the merits of our respective places and masters, the minstrel following after with such tunes as the punctured bellows of W——'s concertina

would allow. Far, far back; but still the same drama of life, the same scenes, the same loyal sentiments, only young fresh-cheeked actors stepping on and off the boards. God bless them all, and keep them safe within and true to the great brotherhood of love, and work, and duty.—E. K., *Dublin*.

Jottings about Melon Culture.

WELL grown Melons are invariably appreciated by the owners of gardens however small, and in establishments of pretension a regular supply is looked for from May to October, and should any breaks occur their place on the dessert table cannot well be filled with any fruit so showy, or when of high quality so luscious. The majority of gardeners who have the requisite conveniences at command do not often let a break in the supply occur, as they are too much interested in Melon culture, doubtless because the plants give such a bountiful return for the labour bestowed upon them, and during the spring and summer months each day shows considerable progress in luxuriant growth or swelling fruits.

From the end of March onward Melon growing may be termed simple and easy compared with the skilful attention required to produce early crops. When well heated houses—fitted with hot-water pipes for supplying bottom heat—are at command, no fermenting materials will be needed in the beds. The pipes can be covered with a few rough stieks, such as faggot wood, and surfaced with a layer of straw shaken from stable manure. Through these materials the heat passes freely, and thus keeps the soil uniformly warm, there is no sinking of the beds, and the growth from the start is sturdy, though not so rapid as when fermenting materials are employed. The beds in nearly all the Melon houses I have had to deal with have been constructed with the object of leaving plenty of room for fermenting materials, and consequently the pipes were invariably from 2½ to 3 feet below the top of the bed. In such cases when fermenting materials are not employed, the plants must either be planted too far from the glass, or a great depth of rough material used to bring the soil up to the required height, and in the latter instance the plants do not get the full benefit of the bottom heat pipes. In building Melon houses for all crops except the early one, my experience has taught me that the bottom heat pipes should never be more than 18 inches below the surface of the bed; ample room is then left for soil and drainage, the plants get the full benefit of the bottom heat, and are also well up to the light, a combination of advantages which does much toward securing good results.

The compost I find most suitable for Melons is one formed of three parts good loam—rather inclined to be heavy than light—one part fresh horse manure, with a little lime rubble and soot added. These ingredients should be mixed a few days before the Melons are planted. Place a layer of the compost over the drainage (prepared as previously advised), then form mounds for the plants, half a bushel for each is quite enough; I prefer plants in 4-inch pots to larger ones, as they seem to take to the permanent soil so quickly and grow without a check.

Firm planting is of the utmost importance, as it induces sturdy growth and early productiveness; loose planting causes the plants to become very rampant, and the early flowers often fail to set. The old ball ought to be only slightly covered with fresh soil, or decay at the collar will sometimes result. Some cultivators advise that the old ball should under no consideration be covered; but if this is not done, repeated waterings soon bare the roots, and then fresh soil has to be added, and although I have grown Melons on a large scale for years I have never found the plants decay at the collar through giving a slight covering of soil; indeed, it is not usually in the early stages of growth that decay takes place, but rather when the trellis is covered with growth, which prevents direct sunshine from reaching the base of the stems.

When the practice of planting on mounds is adopted I never hesitate to water through a rose quite up to the stems in the early stages of growth; but when the fruits are swelling, especially if dull weather prevails, I am careful to avoid giving water within 2 inches of the stems. Should decay at any time be noticed a mixture of freshly slaked lime and powdered charcoal rubbed on the affected parts will generally arrest its progress. Plants that are short-jointed and hard in the stem do not often decay; it is the soft sappy growth resulting from loose planting and too rich a compost which gives so much trouble in that respect. When the roots reach the sides of the mound a little fresh compost should be added, but I consider it a great mistake to add a large quantity of soil at one time; it is far more satisfactory to perform the work in three stages, and to press the soil firmly at each addition.

In regard to the method of training to adopt I prefer allowing the leader to go unstopped till it is within 2 feet of the top of the trellis, rather than to stop at an earlier stage to secure a few fruits near the base. The plants, under the system I advocate, are thoroughly established in the soil before the strain of rapidly swelling fruit affects them—a matter of great importance in the production of juicy, well-flavoured fruits. Fruits which are allowed to swell before the plants are well established usually have a hard thick rind, and do not develop to a standard size.

The extension system of growing Melons is a good one when well carried out, as the fruits are usually of better flavour than those grown under the ordinary system, as root action is kept vigorous throughout in consequence of continuous growth. The system also allows the cultivator to produce a long succession of Melons from one house. In all stages the growths should be kept regularly thinned and stopped, so that there is no overcrowding of foliage. Those who have not practised this system might think there would be a difficulty in getting successional fruits to swell after the first fruits had taken the lead, but a little observation will soon show anyone how to arrange matters in that respect. When the first fruits are about half-grown they cease to swell for a time while the seed is being formed; that is just the stage at which to set an additional number of flowers. After the whole of the trellis is covered the difficulty seems to disappear altogether, and flowers should be fertilised whenever they show at a convenient point.

Three or four distinct sizes of swelling fruits may often be obtained on a single plant. Some part of such plants needs syringing daily whenever the weather is bright, avoiding portions where the fruit is changing colour, and leaving a chink of air on at the top of the house. When a good number are ripening simultaneously the air should be kept comparatively dry. The fruits do not often crack, as the constant growth generally prevents it, but whenever cracking does take place, if the shoot is cut half through with a knife below the fruit no further trouble is given.

When the crop has been cleared on the lower part of the plants the old leaves should be cut away and young growths tied in. Under both systems of training I like to stop the shoots at one joint beyond the fruit, and then allow the sub-lateral to grow freely for a time.—POMONA.

(To be continued.)

Sweet Pea Bicentenary Celebration.

SUBSTANTIAL progress is being made towards the celebration of the introduction of the Sweet Pea into Great Britain 200 years ago. This celebration, as already announced, is to be held on July 20th and 21st at the Crystal Palace, Sydenham, and will take the form of a grand exhibition of Sweet Peas, shown in bunches, in vases, in pots, in pans, in baskets, in bouquets, in wreaths, in table decorations, and in other ways that may suggest themselves to the gardener and florist; at the same time a conference will be held, at which papers will be read and discussed.

The work of arranging for this conference occupied the attention of the executive committee, which met at the Horticultural Club, Hotel Windsor, on Friday, the 23rd inst., when it was decided that the conference proceedings be held during the afternoon on each of the show days. Broadly speaking, the subjects for consideration upon the first day will be the history of the Sweet Pea, the evolution of the Sweet Pea, also an American's views of this popular annual. On the second day it is proposed to deal with the decorative uses of Sweet Peas, Sweet Pea cultivation, and classification. It is probable, however, that other matters relative to Sweet Peas will be discussed; but a further meeting of the committee will be necessary ere titles and authors can be announced, and the final arrangements made. The desire of the executive body is that the largest possible amount of information regarding Sweet Peas shall be brought into reasonable limits of time and space, for it is hoped that the funds will admit of the publication of the papers read and discussion elicited, together with the classification, in the form of an authoritative report.

The executive committee reports that the actual income up to the date of meeting is, in round figures, £250, including subscriptions and special prizes. The hon. sec., Mr. R. Dean, Ranelagh Road, Ealing, stated that, owing to the increased demand, he had distributed practically the whole of the two editions of schedule and circular, consequently it was decided to have a further 550 of each printed. Letters from several continental and American gentlemen were read, and in each case the writer expressed his sympathy with and interest in the movement, and his intention of being present at the celebration. Mr. N. N. Sherwood's generous offer to place at the service of the committee, for the purposes of classification, the immense trials of Sweet Peas his firm—Messrs. Hurst & Sons—are this season conducting at Kelvedon, was unanimously accepted, and Mr. Sherwood's thoughtful generosity in this matter was heartily applauded.

NOTES & NOTICES

Recent Weather in London.—The weather in the metropolis during the past few days has been characterised by intensely cold winds. On Sunday, Monday, and Tuesday there were occasional snow showers. On Wednesday, at the moment of going to press, it was dull and rather cold.

Weather in the North.—From the 20th to the 22nd cold, dull, drizzly weather prevailed, since which the days have been brighter and dry, with cold easterly and latterly northerly wind. On Monday morning 6° frost were recorded, the third occurrence of frost during the week.—B. D., *S. Perthshire*.

Presentation to Mr. C. E. Wilkins.—Owing to the continued ill-health of his wife Mr. Wilkins has been compelled to leave Swanley, of whose local society he has long been the honorary secretary. At the meeting held a short time back Mr. J. Lonsdale, chairman of the society, presented Mr. Wilkins, on behalf of the members, with a handsome barometer in oak case, bearing a suitable inscription. Mr. Lonsdale, in making the presentation, testified to the ability with which Mr. Wilkins had performed the secretarial duties. Mr. Wilkins acknowledged the presentation in fitting terms.

National Carnation and Picotee Society.—Mr. T. E. Henwood, the honorary secretary of the southern section of this excellent society, favours us with a copy of the schedule of the show to be held at the Crystal Palace on Wednesday, July 25th. As evidence of the flourishing state of the society it may be mentioned that upwards of £300, and silver cups are offered in the fifty classes embodied in the schedule. The exhibition is usually a most interesting one, and the coming event should not prove any exception to this rule. Classes are provided for dressed and undressed blooms; while growers of a comparatively small number of plants will find that their convenience has been studied. Entries must reach Mr. G. Caselton, garden superintendent, Crystal Palace, Sydenham, at least four clear days prior to the date of the show.

Birmingham Gardeners' Association.—An essay on the Carnation was delivered at the last fortnightly meeting by Mr. A. W. Jones, of Handsworth, Birmingham, the well-known and successful exhibitor of the Carnation and Picotee. After prefacing his subject with a few references to the history, popularity, and general usefulness of the Carnation, the essayist gave a thoroughly practical exposition of his own mode of culture, and particularly emphasised the importance of very firmly potting the plants as a means of inducing a substantial growth, and insuring a more uniform state of moisture about the roots. Prior to the delivery of the lecture an interesting discussion took place as to the identity of the real Shamrock, the consensus of opinion being that while the Trefoils (*Trifolium minus* and *repens*) are the more popular emblem, the Wood Sorrel (*Oxalis acetosella*) is the original one.

Meath Agricultural Society.—The first annual meeting of the Co. Meath Agricultural Society was held in the Court House at Navan last week. The chair was occupied by Lieutenant-Colonel Everard; after, the minutes were read by Mr. H. J. Cullen, hon. sec., and signed. The financial report, which was submitted by Messrs. Kean & Co., showed the satisfactory condition the finances were, considering the extra heavy expenditure they had incurred. The chairman, in presenting the statement of accounts, pointed out that their scheme not only included farm produce in its widest application, but also flower displays, and, in order to insure the success of their venture, the committee have decided to add some counter attractions, which would consist of athletic functions. Sir John Dillon, Bart., moved the re-election of the present committee for the ensuing year, and was seconded by Colonel Persteman, and was adopted unanimously. The trustees for the current year will be Simon Morgan, Esq., H.M.L.; Lord Longford, and the Hon. H. Bourke. On the motion of Mr. Dove, seconded by Mr. E. Sclater, that J. L. Naper, Esq., be re-elected president, and was carried without demur. Mr. J. Davis, was appointed assistant secretary, whilst Mr. H. J. Cullen was returned unopposed as secretary.

Hessle Gardeners' Society.—At the above Society's meeting on March 20th, Mr. Lambert of Burton Constable, delivered an able paper on the "Rose, its Cultivation and Progress during the Past Half Century." Some excellent blooms of Fortune's Yellow Rose were contributed by Mr. Lawton of Welton House, who with others vigorously discussed the subject. A hearty vote of thanks to the essayist terminated a highly instructive evening.—J. S. K., *Yorks*

National Auricula and Primula Society.—The annual report of the southern section of this society has now been published, together with the schedule of prizes for the show, to be held in conjunction with the Royal Horticultural Society at the Drill Hall on April 24th. From the committee's report and the balance sheet it may be gathered that the society's affairs are quite satisfactory. The schedule embodies thirty classes, and every endeavour has apparently been made to meet the requirements of all classes of cultivators. The hon. secretary is Mr. T. E. Henwood, Auricula Villa, Hamilton Road, Reading, from whom schedules and all necessary particulars may be had.

Chester Paxton Society.—The annual exhibition of this excellent society, which by its periodical meetings is doing such thoroughly good work in increasing the interest in horticulture, is announced for Tuesday and Wednesday, November 13th and 14th, in the Town Hall. The schedule includes about six dozen classes, of which upwards of fifty are devoted to fruits and the remainder to Chrysanthemums. There are sections divided by certain rules, which, with the instructions to exhibitors, are given in clear, concise language that practically precludes the possibility of errors. The honorary secretary is Mr. G. P. Miln, Grosvenor Museum, Chester, who will furnish all requisite information.

The Horticultural Society of Ireland.—At a recent meeting of the members of the above society, held in their offices at 61, Dawson Street, there was a large attendance of members present. After the usual preliminary business was transacted, Mr. F. W. Moore proposed the following motion:—"That a list of meetings attended by each member during the coming year should be printed," a motion which gave rise to a warm discussion; ultimately, however, Mr. Moore, by his wonted energy, carried his motion safely through. There was also a discussion relative to presenting an address to her Most Gracious Majesty the Queen; also the allocation of funds for especial decoration of their first floral display for 1900 if needed. Both these motions were agreed to without any voice of dissent. After the final preparations for the spring show, to be held on the 11th of April in the spacious buildings at Earlsfort Terrace—namely, the Royal University Buildings—were arranged, the business of the council was brought to a conclusion. Mr. W. H. Hillyard, secretary, was in attendance.

Isle of Wight Horticultural Society.—The programme of this excellent association includes:—April 4th, Town Hall, Cowes, "Bees and Bee-keeping," by Mr. F. Midlane; 7th, The Institute, Shanklin, "Notes on Grape-growing," by Mr. J. G. Walker; and the Guildhall, Newport, "The Value of Gardening as a Means of Education," by Mr. T. G. Roper, M.A., H.M.I.S.; 19th, Town Hall, Ryde, Daffodil and Spring Show, in conjunction with the Ryde Horticultural Society. May 5th, St. George's Hall, Sandown, "Flowering and Ornamental Foliage Creepers for the Embellishment of House and Garden," by Mr. Cor. Orchard, F.R.H.S.; 19th, The Mission Room, Brading, "Bees and Bee-keeping," by Mr. J. Newnham; 24th and 25th, Inner Temple Gardens, London, Excursion to the Great Temple Show. June 2nd, Warburton's Hotel, Newport, "Tomatoes, Inside and Out," by Mr. H. Sickelmore; 16th, Schoolroom, Wroxall, "Bees and Bee-keeping," by Mr. T. Collister. July 7th, Warburton's Hotel, Newport, "Plant Foods," with chemical experiments, by Mr. A. Key, M.A., H.M.I.S.; 20th and 21st, Crystal Palace, London, excursion to the Great Sweet Pea Show—the bi-centenary of the Sweet Pea; 14th, Literary Institute, Ventnor, "Bees and Bee-keeping," by Mr. F. Midlane. August 4th, Warburton's Hotel, Newport, "Cultivation of Bulbs," by Mr. J. Hygate; 18th, Schoolroom, Yarmouth, "Bees and Bee-keeping," by Mr. F. D. Hills. September 1st, Town Hall, Ryde, "Australian Fruit Culture," by Mr. G. J. Grapes; 15th, Mission Room, Freshwater, "Bees and Bee-keeping," by Rev. R. L. Morris, M.A. October 4th, Medina Hall, Newport, Fruit and Honey Exhibition. November 3rd, The Literary Institute, Ventnor, "Chemical Manures," by Mr. F. W. Shrivell. December 1st, Warburton's Hotel, Newport, "Bedding Arrangements," by Mr. W. Tribbick.

Gardening Appointments.—Mr. M. Costello, late gardener to Sir James Talbot Power, Bart., Edermine, Enniscorthy, has been appointed head gardener to Lady Ffrench, Elm Park, Merrion, Dublin. Mr. D. Anderson, formerly head gardener at Monkstown Park, has been appointed to a similar position in the gardens of Mrs. Pease at Willow Park, Booterstown, Dublin.

The Shamrock.—At a meeting of the Royal Botanic Society of London on Saturday, the secretary, Mr. J. B. Sowerby, made some remarks upon the species of plants known as the Irish Shamrock. He believed no particular plant had been generally accepted, but the Clover most common in each district was so regarded by the inhabitants. It was usual to think that the white Clover (*Trifolium repens*) was the true plant, but many well known botanists believed that the Wood Sorrel (*Oxalis acetosella*) possesses the best claim to the title. This view was also held by several deceased scientists.

Reading Gardeners' Society.—A large attendance of members assembled on Monday last in the Club Room of the Old Abbey Restaurant to spend an evening in "A Surrey Garden," by the aid of limelight views, and under the guidance of Mr. Alex. Wright of Bucklebury Place Gardens. The garden was that of Falkland Park, which was entirely planned and managed for several years by Mr. Wright, who in a very interesting manner explained the different alterations that were made and the reasons for planting particular varieties of trees, shrubs, and flowers. Messrs. Baskett and Neve spoke to the very interesting evening that had been spent, and congratulated Mr. Wright on the splendid way in which he had laid out the grounds and gardens under his charge. On the proposition of the chairman, Mr. E. Fry, a hearty vote of thanks was accorded to the lecturer, and to Mr. G. Smith of Cintra Lodge Gardens for staging some beautiful specimens of the white Grape Hyacinth, and to Mr. Cretchley, The Gardens, The Honeys, Twyford, for a splendid plant of *Cineraria stellata*.

Royal Meteorological Society.—The monthly meeting of this society was held on Wednesday evening, the 21st inst., at the Institution of Civil Engineers, Great George Street, Westminster; Dr. C. Theodore Williams, president, in the chair. Reference was made to the loss which the society had sustained by the death of Mr. G. J. Symons, F.R.S., who had held the office of secretary from 1873 to 1899, except for the two years 1880-81, when he was president. At the annual meeting, on January 17th last, he was elected president for the second time, in order to preside over the jubilee celebrations of the society next month. Owing to being seized with paralysis on February 14th he had to resign the presidency, and as he never rallied he died on the 10th inst. A vote of condolence with his relatives was passed by the meeting. Twenty-seven new Fellows were elected, as well as two honorary members—viz., Mons. Albert Lancaster, director of the Belgian Meteorological Service, Brussels; and Gen. M. A. Rykatcheff, director of the Central Physical Observatory, St. Petersburg. The following papers were read:—"The Ether Sunshine Recorder," by Mr. W. H. Dines, B.A.; "Remarks on the Weather Conditions of the Steamship Track Between Fiji and Hawaii," by Capt. M. W. C. Hepworth; and "Comparison by Means of Dots," by Mr. A. B. MacDowall, M.A.

Bulb Exporters' Association.—We learn that an association under the above style has been formed by the bulb exporters of Holland in order to protect their mutual trade interests. A status inquiries department, and another for the collection of debts, are special features. The managing director of both these departments is Dr. J. Spoor, solicitor, by the Haarlem court of justice, who acts also as a secretary to the association. The association is divided into six sections according to the principal countries where bulbs are being exported to—viz.: 1, United States of America with Canada; 2, Great Britain and Ireland; 3, Germany and Austria; 4, France and other French-speaking countries; 5, Russia; 6, Scandinavia and Denmark. Each section has its own committee of management: the United States section being a continuation of the late exporters' bond at Lisse. The sectional presidents represent their sections in the general committee. Mr. T. van Waveren is elected president, Mr. Ernst H. Krelage vice-president, and Mr. J. H. Wentholt treasurer. The association, which was started in February, now already consists of 115 sectional members. The headquarters of the association are at Haarlem, and all correspondence should be addressed to Mr. J. Spoor, Wilhelmina Straat 24, Haarlem.

The Foreign Apple Trade.—This continues large in volume, but the season's business to date has averaged only fairly satisfactory. This is true of shipping interests in the U.S. and Canada, and of receivers at London, Liverpool, and on the continent. Much of the trouble may be summed up in the old story of undesirable fruit and unsatisfactory packing. The goods too often arrive at the auction rooms in disappointing condition. Prices received are low, and there is loss for the American shipper. Some of the trade papers are this winter advocating a change in the "machinery," and believe the time will come when foreign dealers will buy direct on this side the ocean from local agents. This will insure proper selection of fruit and proper packing. During the present season, especially throughout the autumn months, too much fruit of soft varieties was sent abroad, tending to demoralise the trade.—("American Agriculturist.")

Flowers Grown by London Children.—An effort to encourage London children to cultivate flower growing has met with gratifying results in the parish of All Saints, South Lambeth. By the kindness of Mr. A. Cameron Corbett, M.P., 2000 poor children were presented each with a Hyacinth bulb and a glass in December last, with simple instructions for growing. A Hyacinth show was recently held at All Saints' Institute, and a beautiful display of flowers was the result of the children's efforts. When it is remembered that they were grown in some of the poorest houses in the vicinity of Nine Elms, Wandsworth Road, and in rooms where a large number of persons have to reside and sleep, it was astonishing that such good results were produced. The vicar, Canon Allen Edwards, presided, and Mr. Corbett gave away prizes which he had provided for the best productions.

Agitation Against Poisonous Compounds Act.—A society has been formed under the title of the Traders in Poisonous Compounds for Technical or Trade Purposes Protection Society to secure the amendment of the Pharmacy Act of 1868, whereby it may be made legal for traders other than pharmacists to sell poisons and poisonous compounds for technical or trade purposes. The initial meeting was held on December 6th, 1899, at Euston Hotel, London, where a number of influential firms were represented, and it was resolved that the existing unsatisfactory conditions of the Pharmacy Act of 1868, whereby poisonous compounds can only be sold legally by chemists, should be ventilated in the agricultural and horticultural and seed trade papers. A second meeting was held on the 6th inst., at Euston Hotel, when it was resolved to extend the sphere of this society to all those trades who are in any way affected by the existing Pharmacy Act, and who would be benefited by an amendment of the said Act to enable them to retail poisons or poisonous compounds for any technical or trade purpose, in original sealed packages, as received from the wholesale dealer or manufacturer. A committee has been nominated, with power to add to their number, who have appointed Mr. G. H. Richards, of 128, Southwark Street, London, S.E., as treasurer; and Messrs. Dobbs & Hill, of Worcester, as legal advisers. Offices and a permanent secretary will be appointed, and to meet expenses it will be necessary to obtain subscriptions. Among the gentlemen present at the last meeting there were guarantees given amounting to £150. The minimum subscription for membership has been fixed at 5s. per annum, or a donation of 10s. 6d.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
March.										
Sunday.. 18	E.N.E.	deg. 38.0	deg. 33.9	deg. 41.5	deg. 21.9	ins. 0.37	deg. 39.1	deg. 42.5	deg. 44.1	deg. 14.1
Monday.. 19	S.S.E.	36.2	35.8	45.2	32.9	0.18	38.9	41.9	44.1	31.3
Tuesday 20	S.S.W.	44.5	40.6	51.4	36.1	—	40.5	41.9	43.9	27.6
Wed'sday 21	E.N.E.	39.2	37.7	47.4	33.4	0.11	40.5	42.2	43.9	21.5
Thursday 22	E.N.E.	43.9	41.8	45.6	38.9	—	41.2	42.2	43.9	36.9
Friday .. 23	E.N.E.	41.2	39.9	45.9	40.5	—	42.1	42.4	43.9	39.8
Saturday 24	E.N.E.	39.0	36.1	41.4	35.6	—	40.8	42.5	43.9	33.9
MEANS ..		40.3	37.8	45.5	34.2	Total 0.66	40.4	42.2	44.0	29.3

A dull week with cold winds and scarcely any sun. Rain fell on three days.



Pelargoniums and Geraniums.

COINCIDENT with the floricultural attributes of the late Mr. E. J. Lowe of Highfield, Nottingham, I am reminded of an article by Mr. J. R. Pearson, Chilwell, upon this subject, published in the *Journal of Horticulture*, November 12th, 1874, to the effect that Mr. Lowe had succeeded in crossing Madame Vaucher zonal Pelargonium and Geranium sanguineum. Many of the seedlings produced red, rose, and white flowers, some with curious foliage. Mr. Lowe sent him two plants in flower, much alike in every respect, and they strongly evidenced their parentage. The colour of the flowers was lilac pink (some see blue in them), and the shape of the flowers was the exact opposite of what a florist would consider perfection, the petals being long and narrow. Mr. Lowe thought it a mule, but Mr. Pearson opined that he would be able to seed it. Mr. Pearson intimated that at the first opportunity he would take one of the plants to the Pelargonium Society's first show, so that the opinions of the savants might be gleaned. I do not, however, recollect having learnt more about the plants since then, and it would be interesting if Mr. Chas. Pearson or other authority could furnish further information anent those botanical curiosities.—W. G.

Sizes of Leeks.

IF, as I gather from the paragraph on page 197 in relation to this subject, it is held that we here in the south do not grow Leeks equal to those produced in Scotland, I cannot but recall the fact that when Messrs. Dobbie & Sons held their great vegetable competition at the Royal Aquarium a few years since, the show of Leeks being the most extensive and remarkable ever seen in the south, and included many samples from Scotland, that the first prize for the finest half dozen was awarded to samples from Hackwood Park, Hants. If, as I gather, the largest of Scotch-grown Leeks measured 8 inches in circumference, then they must have been coarse and huge indeed. A really fine stem is only 4 inches in circumference, and many that take prizes are less in circumference than that, but have from 12 to 14 inches of stem clean blanched.

It is, however, assumed that Leeks are grown for consumption as well as for show, and I am certain that stems only 3 inches round would, when cooked, be found far more pleasant eating than those 6 or 8 inches round. In the Onion we find that size seems, when the bulbs are well grown, to induce nothing coarse in the flesh; but with the Leek, the larger and thicker the many layers of flesh formed in the stem the harder and coarser they are. It is very easy to understand that there are districts where size seems to be the chief consideration. We have quite enough of that form of estimation in the south not to be able to throw stones at the north. Universally it is desirable that table excellence should have full consideration in all vegetable judging.—A. D.

Sparrows and Crocuses.

YOUR correspondent "A. D." is evidently a sweetly reasonable sort of man, also modest, though, perhaps, not overwhelmingly so. He seems to like thinking and setting down his thoughts, and I am one of the last of those who would wish him to do otherwise. There is a certain freshness about his jottings, and no one can say he has a dull pen. But to the Crocuses. "A. D." (page 249) prefers to think "that sparrows mutilate the flowers of yellow Crocuses because they find something sweet in them, and that their act is not 'wanton.'" He is quite entitled to think so; but why should he object to others thinking differently if they are so impelled? He says whoever may give a reason for the practice "must give a practical one," mere assumption (of the nature of his own) "will not do." This is a little curious, but there it is.

I have a mixture of variously coloured Crocuses. The rascally sparrows touch none but the yellows, and these they appear to delight in mutilating. As birds and flowers are convenient for examination, and as I must not say the sparrows are "wanton" and their motive destructive, I "prefer to think" they act in a spirit of sport or spite, for so far as I can see they eat not a particle of the flowers they spoil. It may be there is something in them of which a small amount goes a long way, hence "little nips" suffice. This is suggestive of a bad habit, and I certainly regard the habits of the birds as very bad, for they ruin my yellow Crocuses without benefiting themselves. I have sometimes wondered if they caught a passing reflection of their perky little selves in the glistening flowers, and thinking it a stranger, gave it one of their nasty little pecks. This is the only approach to a "reason" that I can give. True, it is not very "practical," being only on a par in that respect with the theory of "A. D."—B. K., Croydon.

Primula kewensis.

Two years ago this new Primula, which was awarded a first-class certificate by the Floral Committee of the R.H.S. on February 27th, originated among a number of seedlings of *P. floribunda* at Kew. It is of hybrid origin, *P. verticillata* and *P. floribunda* being the parents. These two species are generally associated with each other in the greenhouse, and by this means became crossed. When in a young state the hybrid was seen to be much more vigorous than the young plants of *floribunda*, and eventually took a considerable degree of the habit of the other parent, the leaves, however, being free, or almost so, of the white colouring of *verticillata*. The plant exhibited was a foot through, and rather more than that in height, and was a perfect mass of flower stems, on which the whorls of bright yellow blossoms are abundantly produced. The habit is all that is good, the flower stems being strong enough to support the mass of bloom without being at all stiff. It has yet to be seen whether it can be reproduced from seed; if this can be done it will make a thoroughly good greenhouse plant, as the same plant can be had in flower for several months. Despite "Scrutator's" assertion on page 199, I think this is undoubtedly a true hybrid, though it was not secured artificially.—R. G. K.

Judges and Judging.

By way of showing that there is room for differences of opinion to exist, and to illustrate how conscientious our best judges are, and how much trouble they take to arrive at the best decisions, I will, if you will permit me, recall an incident which occurred at one of our great provincial shows a few years ago—an incident honourable to all who took part in it. A valuable prize was offered for a large group of Sweet Peas. The two judges who were appointed to judge the class were a well-known florist and a representative of the horticultural Press—two men whose ability for the work could not be called in question. Well, they differed in opinion, and called in other two judges, one being one of the first gardeners in the kingdom, and the other a well-known commercial horticulturist, recently deceased. These two gentlemen again divided, so that there were two for one stand and two for another. To bring matters to a climax a fifth judge was called, and he happened to be perhaps the foremost authority on florists' flowers in Britain. His vote, of course, settled the matter. It is perhaps worth while pointing out that the society at whose show this incident happened adopt the course advocated by "An Old Provincial," as the same judges are appointed to do the same work year after year.—OBSERVER.

Bud-dropping in Peaches.

THE interesting note by "W. S.," on page 172, respecting this troublesome habit of Peach and Nectarine trees will repay perusal by anyone who grows these delicious fruits. Evidently "W. S." has had far too much experience to start a direct theory as to the cause of bud-dropping, and he is careful to show that one at least of the accepted causes has not in his case been followed with such disastrous results as he expected. But he wisely refrains from concluding that dry roots and red spider do not form a combination likely to result in bud-dropping.

Circumstances so alter cases that the more experience one gets in this, as in other branches of gardening, the less one is likely to commit themselves. But after all the thing has to be looked at squarely, and those who have to provide fruit for dessert must strain a point to do so, let bud-dropping be never so mysterious, and mysterious it certainly is. In my own case I have to provide fruit at a season that necessitates forcing that very early variety Waterloo, but the demand is not great, and one tree of it suffices. This, of course, has to be grown in a house with later varieties.

In the summer of 1898 I was convinced that this individual tree had its wood over-ripened, and I found to my cost that it was so, for though carefully looked after as regards watering at the roots, bud-dropping was so badly in evidence the following winter that a partial crop was all I got from it. Last summer the tree was shaded as soon after the crop was gathered as seemed desirable, and this season it is carrying a crop that will have to be thinned to at least a third of the number now swelling.

Other trees in the house are Early Grosse Mignonne and Alexandra Noblesse. The latter was carrying its fruit last season, and wanting a dish in July I had perforce to shade it to keep it back. This has suffered from bud-dropping a little this year, so it would appear that shading in one season and in trees next to each other led to entirely different results. Here of course the man with a theory—if he was sufficiently acquainted with varieties—would say that Waterloo naturally made up its growth earlier than Alexandra Noblesse, and therefore required shading, while the latter would need all the light available.

This is just what I thought at first, but the other tree, Early Grosse Mignonne, is in the lightest part of the house, was totally unshaded all through the season, and is now the most satisfactory of the three, and as all acquainted with it are aware, it is a variety that brings its growth

early to maturity. When we start out with the idea that over-ripening is the cause of the trouble, we are met with the significant fact that the highest and best ripened portion of the trees are least affected. "W. S." has shown that in his case at any rate his trees have been comparatively immune through the dry season, and want of water should by all reasonable deduction have produced one of the worst seasons on record.

Yet with all this seemingly contradictory evidence there can, I think, be little doubt that the more carefully the trees are cultivated and the closer the attention paid to the likes and dislikes of individual sorts the less likely is bud-dropping to be a serious trouble. Therefore avoid overcropping and starvation as much as overfeeding with its attendant grossness of growth. Avoid, too, the slopping about of pailfuls of water early in the season and the drenching two or three times daily with the syringe whether the weather is fine or wet. Lay in only sufficient wood to form a well furnished tree, so that the light plays as equally as possible in all parts of it, and keep the foliage clean.

This advice has been given many times in the Journal, but unfortunately it is not often followed in its entirety. Again I would like to see those practical men whom one often meets at shows and in their gardens, coming out of their shell and letting readers have the benefit of their own experience.—H. R., *Coldham Hall, Bury St. Edmunds.*

Market Gardening in South Africa.

THE market gardener is to a considerable extent a yet unknown quantity in South Africa. In the Transvaal this is especially the case. There has always been a good market for all kinds of garden produce in Johannesburg, but the demand has invariably been greater than the supply. The same remark applies to most of the towns and villages in South Africa, with the exception of Cape Town, and here vegetables such as Cabbage, Peas, Beans, and Tomatoes can be obtained at reasonable prices. In Natal the "market gardens" are almost entirely in the hands of the coolies. These people were originally brought over from India under indentures to work on the railways for a certain number of years.

After their period of service expired they took up plots on the land between Durban and Pietermaritzburg. They have turned their attention principally to fruit and keep the market well supplied with Bananas and Pine Apples, which can generally be bought at the rate of 2s. per 100 for the former, and six for a shilling of the latter. They are not market gardeners in reality, though they are called so. Chinamen are popularly supposed to be excellent market gardeners, at least this is the opinion held in Australia and the Pacific coast. Some of these people have at times settled down in the Colonies and started gardens, but Europeans in Africa will have no dealings with them, and they have had to turn their attention to trading with the natives.

The Boers as a rule live on Pumpkins. This is their one vegetable food. Pumpkins are no trouble to grow, they are also no trouble to prepare for the table, and it is hard to enter a Boer homestead at the dinner hour without finding this vegetable on the table. Pumpkin is very well in its way, but Englishmen soon tire of it and look for others, which as a rule they cannot get. On the mines along the Witwatersrand reef the great difficulty the men had to contend with was the absence of all green food. Many of these mines employed as many as five or six hundred Europeans, and it is not going beyond the mark to say that the white men on the reef would have disposed of enough garden produce to have kept dozens of gardeners busy, but no attempt was ever made to supply them. The writer lived on one occasion for about a year on a mine situated about ten miles from Johannesburg, and during that period the only vegetable he partook of, leaving the inevitable Pumpkin on one side, were of the potted variety.

After the present "difficulty" is satisfactorily settled, there will be great openings for qualified market gardeners in Africa. The climate is all that could be desired. Labour is cheap, natives can be engaged to work for 15s. a month, and their food; the latter consisting of maize with an occasional supply of meat, costs very little. With a growing population, ever increasing markets will be opening up in all the large towns and villages of the colonies and the Transvaal. A few years ago an expert travelled through the country districts of the Cape and Natal giving lectures on dairy farming. This gentleman was despatched on this errand by the Government, and the farmers came in in numbers to listen to him and to ask his advice, since which a great improvement in the supply of dairy produce has been noticeable. The market gardener, however, has been altogether neglected.—D. G. R.

[It is certain that the opinion expressed above will be justified by the development of a market gardening industry in the neighbourhood intervening between Johannesburg and Pretoria, which lie some fifty miles apart. There the marvels witnessed at Melbourne and San

Francisco during the second decade of their existence—1860-1870—are sure of being reproduced, so that ten years hence a population of some two hundred thousand or more will be crying for fresh vegetable food during the summer months. The demand for Peas, Cauliflowers, Cabbages, Tomatoes, Melons, Potatoes and Brussels Sprouts will be enormous. But intending emigrants should recollect that, compared with England, it is an arid land, and the soil can only be kept moist and friable during the winter and spring months by continual watering or even irrigation, if good results in market garden produce are to be obtained. Then with the summer come swamping thunderstorms and often astounding hailstorms, which destroy unprotected vegetables and fruits.

Hence the newcomer must have a little capital if he wishes to secure the first fruits of the new condition of things. So wonderful, however, are the productive properties of the soil when plentifully irrigated, that a skilful cultivator will rapidly reap the reward of his labours in the matter of produce, while for the first half a dozen years prices will undoubtedly rule high. It may be said that in mining communities market gardening is the one industry which is not overdone. Moreover, the Rand is not in the nature of a precarious alluvial mining camp, but a centre of solid wealth, which will attract the class of luxurious persons who consume fresh food in large quantities. Pastoral farmers like the Boers and isolated miners gradually learn to dispense with fresh butter, cream, milk, and vegetables. In countries such as Australia and South Africa there is no verdant landscape or dairy farming scenery, and "a farm" is the last place at which to procure the aforesaid necessities of European life. These things are only developed within easy distance of the most populous districts—one of which the Rand is certain to become.]

Spring Flowers.

To many persons the spring of the year is the most pleasing of all the seasons, and one can scarcely be surprised that this is the case. The lover of Nature, the lover of flowers, the lover of trees has then the opportunity of seeing all these things clothed in their tenderest garb, which appeals to them more than the profusion of summer or the rich full tones of the autumn colours. There are few gardens indeed where the spring does not bring in addition to its bountiful promises a certain number of flowers, and there are none at any period of the year or in any position in the garden that are more beautiful than these. They are not as a rule of pretentious charms, but tend rather to a purity and modesty that appeal with irresistible force to the tastes of the refined.

Where is the gardener, be he amateur or professional, who does not delight in wandering round his garden, peering into nooks and corners for the anticipated flowers? The garden may be simply a narrow straight border in a confined back yard, or the gardens and grounds of some princely domain; in both are the same keen desire, the same eagerness, to find first the harbingers of spring and then the blossoms, telling us in floral language that spring has come. Hundreds of thousands of flowers are thus sought for by those interested in horticulture throughout the length and breadth of the British Isles.

Our pleasure in this pursuit is added to immensely by the vagaries of the climate, with its many rapid changes, that carry us from sunshine to gloom, from calm to storm in the space of a few short hours. Every gardener knows that we scarcely have two seasons alike, whereas in many other lands the seasons come and go with the regularity of the tides, and each succeeding one is largely a counterpart of its corresponding predecessor. Though these extreme variations cause us many an hour of trouble, they nevertheless add a meed to our enjoyment in bringing us constant surprises, for to a great extent we never know what the next day may bring forth. We find the swelling bud, and speculate as to its complete expansion, but our estimate is not always correct. We have all seen the bud that wants the sun's genial influence for only a few hours' rest in the same condition for day after day, and almost week after week. By this very uncertainty, then, I say again, is added a zest to our appreciation, and a greater power to enjoy our treasures when they come. We Englishmen can yield to none in our power to appreciate the beauties of Nature as found in the field, the hedgerow, the garden, and the wood.

If the enthusiastic hardy plant lover could in a few days during spring visit different places in the British Isles, with their varied conditions, what a plethora of beauty he would find. Plants that in

northern and cold exposed places have scarcely started to grow would be found in their glory in some genial southern spots, and those which had gone past in the latter would be at perfection in the former. Even in very limited areas the difference of the precise moment of flowering varies considerably, so that neighbours within easy distance can admire the plants in each other's garden over a much more protracted period than could possibly be done in their own.

course to think of summer and autumn glories, and must not completely fill the whole of the available space in the garden with early flowers, and thus preclude the possibility of finding places for plants that bloom later in the year.

The simple flowers of the spring, such as the Snowdrop, the Violet, and the Crocus, wake an enthusiasm which the Rose in her season is scarcely capable of excelling, and cultivators are watching each morning



FIG. 72.—SPRING FLOWERS.

What a wonderful list the expert hardy plantsman could compile if he were to set himself to the task of enumerating only the choicest spring flowers! The range of shape of flower, habits of plants, dates of blooming, and colour would be enormous, and the fortunate possessor of such a stock would constantly revel in the prodigality of beauty in his garden. But such is scarcely possible, though there are many amateur specialists who have marvellous collections. They have of

these chaste and simple flowers developing in the growing sunshine. Look at those represented in the illustration (fig. 72), which include the Snowdrop, the Crocus, and the Oriental Hellebore; or, as the latter is often popularly termed, the Easter Lily. In form it can scarcely be regarded as resembling the Lily, with which it has not the slightest relationship, and inasmuch as the variety represented is atropurpureus, the resemblance is still further decreased. The particular Snowdrop

depicted is *Galanthus Imperati*; while the striped *Crocus* is Sir Walter Scott and the self David Rizzio.

There are portrayed three of the flowers of the day; more might have been added, but the individual beauty would have been much reduced if not entirely marred by doing so. There is one great point in favour of these and kindred vernal flowers—namely, that they will grow practically anywhere, and it is almost certain that a selection might be made which would thrive in any reasonable position. They do not call for large outlays of time or of money, and consequently are amongst those plants that come into the small as well as the large garden, and flourish and give pleasure equally in both.—H. ROSE.

The late Mr. G. J. Symons, F.R.S.

FEW readers of the *Journal of Horticulture* can, I think, have failed to consult at some time or another the excellent little weather table which until recently appeared weekly in its pages, signed G. J. Symons. The first of these weather reports made its appearance as far back as July, 1870, and the series only came to an end in July last year. Is there a single writer for the *Journal*, I wonder, who has ever equalled this record as a contributor week by week without a break for nearly thirty years. But, then, a very brief glance at his lifework will, I feel sure, be sufficient to show that the late Mr. Symons was no ordinary man.

His career as a meteorologist may be said to have begun when at the age of nineteen he started an organisation for observing and recording thunderstorms. Three years later he entered upon the great work of his life, when he published the first volume of "British Rainfall," containing the returns from 168 stations in the British Isles. During the present year will appear the fortieth volume of that valuable annual, under the editorship of his appointed successor, Mr. H. Sowerby Wallis, who has for nearly thirty years assisted him in this unrivalled piece of rainfall work. To show how this rainfall organisation has increased and expanded, I may state that in the new volume when it comes out will be found classified, discussed, and arranged in the most exhaustive manner, the records from over 3000 observers. In 1866, or six years later, Mr. Symons started his "Monthly Meteorological Magazine," the last number of which, and the only one which has not contained a contribution from his pen, reached me about a week ago. Consequently this, the only magazine in this country devoted exclusively to the science of meteorology, has been in existence for over thirty years.

In 1856 he joined the British (now the Royal) Meteorological Society, which the late Mr. E. J. Lowe, F.R.S., whose death we have also to deplore, had assisted in founding only six years previously. For forty-four years Mr. Symons was a Fellow of that society, and for twenty-five years one of its secretaries. For forty-two years, Mr. Wallis informs us, he supplied monthly records of meteorological observations to the Registrar-General; for forty years he was a member of the general committee of the British Association, and served on many of its committees, and for nearly forty years he was a member of the Scottish Meteorological Society. For twenty-seven years he was a member of the Société Météorologique de France, and served three times on the Council. Added to all this, throughout the forty years in question he kept continuous records of atmospheric pressure, temperature, and rainfall in Camden Square, and it was from these observations that the weekly weather tables in the *Journal of Horticulture*, before referred to, were compiled.

Then as regards honours, it will suffice to mention that he was elected a Fellow of the Royal Society in 1878, that he was created a Chevalier de la Légion d'Honneur in 1891, and was selected by the Prince of Wales to receive the Albert medal of the Society of Arts for 1897. He was president of the Royal Meteorological Society in 1880 and 1881, and in view of the approaching commemoration of the society early next month of its fiftieth year, he was re-elected president only two months ago for that year. This is the first instance in the annals of the society of the re-election of any president after having once held that office for the usual term of two years. From the foregoing slight sketch it will be gathered that the subject of this brief memorial notice was not only an eminent meteorologist, but also a most indefatigable and earnest worker.

But how can I hope to convey to those of your readers who did not know him as intimately as I had the honour and pleasure of doing for over twenty-five years the wonderful charm of his individuality? Although always busy, his usual hours of work being from 9 A.M. until 11 P.M., he was ever ready to lend a helping hand to any fellow meteorologist requiring it. It has often been said of some great man who has passed away—

'He was a man, take him for all in all,
I shall not look upon his like again.'

Never I think were these words more appropriate than in the case of Mr. Symons—the best known and best beloved British meteorologist of his day. Nor can we wonder that our loss should be thus irreparable

when we consider that for over forty years he had been carefully training himself for one special line of work, a line of work for which, owing to his genius for statistics, his powers of organisation, and his genial temperament, he was peculiarly fitted.

Whether in his study, in his matchless library of meteorological works, at a council table, at a public meeting, in the house of a friend, or wherever he went, there was always a certain indescribable charm of manner and of speech which rendered him a general favourite. Although such a book lover he was not the least a pedant. Indeed, his conversation and writings were invariably characterised by their unpretentiousness, ready wit, and clearness and conciseness of expression.

Although for some years on the council of the Royal Botanic Society, he was no horticulturist; and yet in hundreds, if not in thousands, of gardens throughout the length and breadth of the land the name of Symons has become a household word, owing to the numerous rain gauges he has from time to time been the means of establishing all over the country.—E. M., *Berkhamsted*.

Notes on Figs.

THE fruits of Early Violet and St. John's ripen on trees started in November or early in December during April, or under hard forcing in March, and though small are desirable for early dishes. Angelique, Brown Ischia, Pingo de Mel, and White Ischia are also excellent for early forcing in pots, the fruits being wholesome, and much appreciated at table. All points considered, Brown Turkey is the best Fig for general cultivation, forcing well and bearing abundantly. A good companion for it is White Marseilles.

When ripening commences the atmospheric moisture should be gradually reduced, admitting a little air constantly by the top ventilators, as a circulation of rather warmer and drier air is necessary for securing flavour and thorough ripening, and also for avoiding "spot." The fruits of the later varieties are particularly liable to this defect due to a parasitic fungus, *Gloeosporium læticolor*, which is best guarded against by a little sulphur on the hot-water pipes, withholding water from the fruit and ventilating freely. It is also advisable to gradually reduce the supply of water to the roots when the fruit commences ripening, yet affording sufficient to keep the foliage healthy. The combined conditions appear to baffle the fungus, and favour high quality and good finish in the fruits.

Early forced planted out trees appear to swell and retain their first and most valuable crop when the growths are kept somewhat closely pinched in the early stages, the principle being that the energies are concentrated on the fruit, instead of being drawn away by allowing the growths to extend considerably. In some cases pinching to three leaves has the effect of causing the first crop Figs to swell and pass the flowering satisfactorily, whilst other trees allowed to make five or six leaves before pinching off the points of the shoots cast the fruit wholesale.

These are matters deserving of consideration, and in some cases it may be desirable to even still further restrict the first growths so as to insure the first crop fruits swelling and being retained, for the casting of the first crop is a great drawback. Of course the varieties differ greatly in this respect, those named in a foregoing paragraph being, perhaps, the most reliable varieties, other conditions being favourable. These are restricted at the roots, surface fibres encouraged and kept active by judicious top-dressings of rich material. Good turfy loam, horse droppings, and old mortar rubbish in equal parts, favour an abundant formation of fibres, and these obtained feeding is an easy matter. To insure uniform moisture a light mulching of decayed manure serves that end and is a source of nourishment, this being added to from time to time so as to keep about an inch thickness. Then liberal supplies of water or liquid manure will be necessary to assist the fruit in swelling.

It is well to continue to pinch out the points of the shoots to form spurs, and prevent overcrowding by timely disbudding, for Fig trees cannot have too much light, the growths being fully exposed to the sun. Extensions and successional shoots will require attention betimes for tying, allowing space for their thickening. The temperature for trees started at the new year or at the beginning of February may now be increased to 60° to 65° at night, 70° to 75° by day with a gleam of sun, and 80° to 85° or 90° under a cloudless sky.

If it is desired to increase the stock cuttings may be inserted, selecting well ripened shoots of about 6 inches length, and taking them off with a heel or portion of last year's wood attached. They root readily in a gentle bottom heat, all eyes being removed from the part inserted in the soil. They are best potted in 3-inch pots, and when rooted should be shifted without much delay into 5-inch pots. From the 5-inch the trees may be transferred to 7-inch pots, but avoid overpotting. Good drainage is necessary, firm potting essential, and turfy loam, with a fifth of thoroughly decayed manure and a sixth of old mortar rubbish, forms a suitable compost. The trees should be trained with a single stem to a height of about a foot, then the point should be pinched to cause side growths to push, about three being retained to form the head, pinching the shoots at from five to six leaves.—GROWER.



Apple Sturmer Pippin.—I think this is a much over-rated Apple. In growth and freedom of cropping it is all that is claimed for it, but in point of flavour in February and March it is sadly deficient. In my own case it does not keep plump, but shrivels, although my store room is a good one, in which fruit of Cox's Orange Pippin will keep quite fresh until the end of February.—E.

Apple Norfolk Beefing.—"W. S.," in his useful notes on page 242, refers to this old English Apple as Norfolk "Beaufin." The name is so given in several catalogues, so the mistake alluded to is excusable. If he turns to Dr. Hogg's "Fruit Manual" he will find this note:—"The name of this Apple is sometimes written Beaufin, as if of French origin; but it is more correctly Beefing, with a good English ring, from the similarity the baked fruit presents to beef." It is a very dark coloured, firm, long-keeping Apple. Dried fruits of it are colloquially known in Norfolk as "Biffius." I have had fruits of it hard, sound, and fresh throughout the month of May.—POMOLOGIST.

Senecio killmandscharica.—This new Senecio (or giving it its more popular garden name, "Cineraria") has recently been introduced from British Central Africa, seeds being sent to Kew in 1893 by Mr. Mahon. It is too early to prophesy as to its ultimate worth as a garden plant, though there is reason to believe that when its requirements become better known it will find a place among greenhouse winter flowering plants. The plants at Kew were allowed to make a few slender branches, which were trained round stakes, and from every node on the upper half of the branches large trusses of flowers are produced. The leaves are somewhat fleshy, varying from 2 to 3 inches across, and are curiously shaped, being almost reniform, with a deep indentation at the top. The flowers are yellow and star-shaped, about the same size and borne in similar sized heads to those of *S. Heritieri*. If, when it becomes better known, its habit can be improved on, it will be a good plant to grow with the ordinary garden Cineraria.—W. D.

Mitraria coccinea.—In the early fifties no greenhouse plant was more interesting to the writer than the Chilean Mitre Flower, with its small opposite or sometimes trifoliate leaves, and solitary flowers of a bright scarlet colour, about $1\frac{1}{2}$ inch long. The habit of the plant is of a trailing sub-shrubby nature, and if trained over a trellis, an upright cylindrical one by preference, a good specimen may be secured, and in which form the writer once grew it for exhibition purposes in a cool greenhouse. In mild districts it has proved hardy out of doors. For growing large specimens from a 12 to 16-inch pot is sufficient, and the plants may be cultivated in the same pots for several years if liquid manure is applied during the season of growth. A compost of sandy peat and turfy loam suits the plant admirably. After flowering the current year's growth should be shortened back to within a few inches of the base. *Mitraria coccinea* (fig. 74, page 273) is one of those much too neglected greenhouse plants which would assuredly receive extended recognition were its merits better known.—W. G.

Impressions of Ferns.—*Apropos* of this subject—your answer to "Journeyman," on page 257—allow me to supplement, for his benefit, the excellent process you describe by another I have successfully employed on various occasions. This is to oil a sheet of foolscap by sprinkling it lightly with salad oil, or any clear oil, distributing the oil evenly over the paper, and allowing the paper to absorb it. When it has gone off the surface smoke the paper by holding it over the flame of a lamp or tallow candle until it is uniformly black. This supplies the medium for printing from. To operate lay the Fern frond face down on the blackened paper, place a sheet of clean paper over it, and rub gently. The frond may then be lifted and placed on a sheet of clean white paper, the blank flyleaf of a book, or whatever it is desired to have the impression upon. By again placing a sheet of paper over the frond without disturbing it another gentle rubbing gives the transference. Any leaves, as well as Fern fronds, particularly those of hard texture, such as the leaves of Roses, give admirable impressions by this method, not only in outline, but the delicate tracery of the veins comes out very distinctly.—K., Dublin.

Apple Lady Henniker.—This Apple, according to the late Dr. Hogg, was raised at Thornham Hall in Suffolk fully fifty years ago. It is a variety not cultivated as much as its merits deserve. Its quality for cooking is excellent, and for dessert it is quite passable; the only fault in this respect is the size. It is a good keeper, lasting well into March. In growth it is vigorous, and in consequence it does not fruit freely in a young state; by allowing it to run rather freely the first few years it gradually gets into a bearing condition. For strong soil it is excellent.—E. M.

A Gigantic Seaweed.—"The largest plant in the world," said an eminent naturalist to a writer in a transatlantic contemporary "is probably a gigantic seaweed, known as the 'Nereocytis,' which frequently grows to a height of more than 300 feet. The stem of the plant is as strong as an ordinary rope, and large quantities of it are dried and used as rope by the inhabitants of the South Sea Islands, where the curious vegetable ropes are found. This seaweed usually grows to a depth of from 200 to 300 feet. As soon as the plant takes root a spear-shaped balloon is formed, which grows with the stem towards the surface of the centre. This balloon frequently has a diameter of 6 feet or more. It has, of course, an upward tendency, and therefore keeps the stem growing until it floats on the top of the water. This enormous weed grows in such quantities that large meadows like islands are formed, which are often so big as to impede navigation. The ropes made from the stems of the plant are used for building purposes, and the balloons when dried make very serviceable vessels."

A New extile Plant.—Some years ago, an explorer in Asia discovered a plant of silken fibre, used by the Turkomans for the manufacture of withes and cord, and by the Canagues for woven goods. This plant, known as *Apocynum venetum*, is a sort of bush with slender cylindrical branches, sometimes 6 feet high. It grows in Europe, Siberia, Asia Minor, the north of India, Manchuria and Japan, but is not cultivated, and, up to the present has been used only in the natural state. The branches die yearly, and in the spring new shoots start horizontally from the roots. It flourishes best where the land is under water during a part of the year, notably in the neighbourhood of rivers that overflow at stated periods. Under favourable conditions the *Apocynum* develops quickly, and in a short time the branches form a thick growth, almost like a miniature wood. The best fibre is obtained, says a colonial exchange, by cutting the branches in midsummer, when the plant has obtained its full growth. The attention of the Russian Government was called to this plant in 1891, and in 1895 they began to use it in the manufacture of bank notes, and since then the plant has been cultivated at Poltava. The results obtained thus far are considered excellent, and the time is doubtless near when the *Apocynum venetum* will take an important place in the textile market.

Large Onions.—A recent note on large Onions and their keeping qualities, as evidenced by the fine sample sent me by Mr. Beckett, inspired another able Onion grower of Hants, Mr. Kneller of Malshanger Park, Basingstoke, to send me a sample, that I might see how his had kept also. Mr. Kneller attributes some of the special keeping properties of these big bulbs this winter to the thorough maturing they got last autumn, and that no doubt has much to do with it. But something is due to the material improvement effected in the character of Ailsa Craig, the variety in question, and still by far the best, by annual selection, the very firmest bulbs and best keepers being specially retained for seed stocks. The Hampshire bulbs were a little larger than the Elstree samples, but otherwise not superior. But all the samples served to show how well the very large ones are keeping this winter. I have planted for securing some seed several of the very best, and others have been, or will be, cooked. Those that have been gently stewed, then served with a little butter and milk, were most delicious and mild in flavour. Onions ordinarily grown have too much of that quality called flavour, which is found in offensive hotness and perfume. It is, therefore, so much to the credit of these big bulbs that those characteristics are lacking, and thus they become, when properly cooked and served, delectable food. Those who would have such this season find they are much too late for seed sowing. But if they have strong plants of Tripolis or Roccos growing in drills outdoors, and having trenched and heavily manured a small area of ground, will in the course of a week or two carefully lift some of these plants, and will dibble them out thinly, they will secure fine bulbs in the summer.—A. D.

Stenogastra concinna.

THIS is a small but attractive stove plant that is by no means so showy as some of its relatives in the Gesnera family. The interest of plant houses, however, does not depend on occupants with large or brilliant flowers, and sometimes a neat little plant like this *Stenogastra* (fig. 73) is quite as much admired as those of more striking character. The leaves are small and oval, the growths short, and the flowers rise in slender stalks only an inch or two above the soil. They have a narrow funnel-like tube, with an expanded limb of five lobes—the two upper very dark purple, the lower a lighter shade of purplish lilac and white, a dark stripe running down the upper part of the tube outside, and inside are numerous dark spots. Flowers are produced freely, and clustered over the plant have a pleasing appearance.

The Royal Horticultural Society.

Drill Hall, March 27th.

THE exhibition on Tuesday was an excellent one, considering the weather that has prevailed of late. Orchids were not generally very numerous, but floral exhibits were plentiful and varied. Apples were not particularly meritorious.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. J. H. Veitch, J. Cheal, G. Kelf, A. Dean, S. Mortimer, J. W. Bates, W. Farr, G. Wythes, W. Balderson, F. Q. Lane, Jas. Smith, G. Reynolds, E. Beckett, J. Willard, G. Bunyard, and H. S. Rivers.

Mr. R. Parker, gardener to the Duke of Richmond and Gordon, Goodwood, staged nine dishes of Apples in good condition, which embraced Lane's Prince Albert, Sturmer Pippin, Norfolk Beefing, Beauty of Hants, and Wellington. Mr. W. Poupart, Marsh Farm, Twickenham, staged five varieties of Rhubarb, to show their respective merits as grown outside at this season. Daw's Champion was far and away superior to the others, and the committee awarded it a first-class certificate, which was richly deserved. Hawke's Champagne came next in point of earliness, but was decidedly behind in both size and colour. Albert followed with less than a third of the growth, while Linnaeus was smaller still under the same conditions. Victoria was only just starting.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); and Messrs. C. T. Druery, H. B. May, R. Dean, G. Reuthe, Wm. Howe, J. Hudson, J. Jennings, J. F. McLeod, R. Fife, C. H. Pearson, J. D. Pawle, R. Wilson Ker, Chas. E. Shea, E. H. Jenkins, E. T. Cook, Harry Turner, G. Paul, G. Nicholson, and J. H. Laing.

A splendid collection of hardy flowering plants and shrubs were staged by Messrs. W. Paul & Son, Waltham Cross. The old Double French Cherry, Carnation-flowered Peach, *Staphylea colchica*, Double White Peach, *Forsythia suspensa*, and *Pyrus Malus floribunda* were all deserving of special attention, while their arrangement with a variety of foliage plants left little to be desired (silver-gilt Flora medal). Messrs. R. & G. Cuthbert, Southgate Nurseries, staged a group of *Azalea indica*, Fielder's White, arranged with Palms and Ferns. The plants were all giants, and carried hundreds of flowers, probably thousands; it was certainly a noteworthy exhibit (bronze Banksian medal). Messrs. J. Peed & Sons, Norwood, arranged a group of foliage and flowering plants, such as *Clivias*, *Azalea mollis*, *Ericas*, *Azalea indica*, *Cyclamen*, *Hyacinths*, and *Mignonette*, with Palms, Ferns, *Pandanus Veitchi*, and *Aralias*. The group was spread out to such an extent that most of the pots and other machinery was all too visible.

Messrs. Barr & Sons, Covent Garden, had a large exhibit of *Narcissi*, grown in pots, also in a cut state. The chief forms were *Cynosure*, *Victoria*, *Henry Irving*, *Duke of Bedford*, *Cernuus*, *Emperor*, *Horsefieldi*, *Sir Watkin*, *Mrs. Langtry*, *Catherine Spurrell*, *Cyclamineus*, *Wm. Goldring*, *Emperor*, and *Golden Spur*, amongst many others. A few *Anemone fulgens*, *Scillas*, and *Irises* gave a little brightness to such a large group of yellow and white (silver Flora medal). Messrs. H. Cannell & Sons, Swanley, staged a box of semi-double *Zonal Pelargoniums*, pure white in colour, and a fine improvement on the old *Hermione*, should make a good market variety; it was labelled *All Flower* (Miss G. Ashworth), from which it does not transpire whether Miss G. Ashworth is the actual name or that of the raiser.

Messrs. Isaac House & Son, Westbury-on-Trym, Bristol, staged a table of *Violets* in pots, all well grown and flowered. The following varieties were included—*La France*, *Luxonne*, *Princess of Wales*, *California*, *Admiral Avellan*, *Coolcroonin*, *Mrs. J. J. Astor*, and *R. Augustine*, certainly an interesting exhibit. Messrs. Jas. Veitch and Sons, Ltd., Chelsea, staged some specimen plants of *Viburnum Tinus lucidum* in baskets. The plants were all in splendid health, and well

furnished throughout with attractive white flowers (silver Banksian medal). The same firm also arranged a pretty group of *Clivia miniata* seedlings, which displayed a wide range of colouring, while the plants were carrying large and well developed trusses (silver Banksian medal).

Cyclamens were staged in great variety by the St. George's Nursery Company, Hanwell. The plants were in 5 and 6-inch pots, and all laden with flowers. Some of the plants must have been carrying fifty to sixty fully developed flowers. The same firm also staged a table of *Cyclamen fimbriata*. This is truly a novelty, the foliage being as much fringed as the flowers, but it is decidedly inferior to the old strain as a decorative plant (silver-gilt Banksian medal). Messrs. T. S. Ware, Ltd., Tottenham, arranged a table of hardy plants in flower, including *Irises*, *Primulas* in variety, *Cyclamens*, *Grape Hyacinths*, *Anemones*, *Saxifragas*, *Narcissi*, and others. The exhibit was spread out too much to permit of a good display. A pleasing feature was the group of *Hippeastrums* staged by Mr. A. Cryer, gardener to J. A. Kendrick, Esq., Barron Court, Edgbaston. The flowers were well formed and of good type.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, arranged a collection of *Tulips* and a few *Narcissi*. The *Tulips* were chiefly *Joost Van Vondel*, *Belle Alliance*, *Bacchus*, *Wouwermans*, *Lord Derby*, *Queen of the Netherlands*, *Proserpine*, and *Artus*, while the *Narcissi* comprised the well known sorts, all arranged with little *Ferns* and *Palms*, and a variety of other spring flowering shrubs. A group of *Laburnums*, *Magnolias*, *Stapelias*, *Laurustinus hirta*, and double flowering *Thorns* were arranged effectively by Messrs. Wm. Cutbush & Son, Highgate, but the light from the windows behind somewhat detracted from the display. Mr. J. Russell, Richmond, had a collection of standard and other flowering shrubs, which included *Lilacs* in variety, double *Prunus* and *Guedres Roses*, also *Clematises*, *Azalea mollis*, and *Staphyleas* (silver Flora medal).

Mr. J. May, Twickenham, staged a splendid table of *Cyclamens*, in a variety of colours, the standard reds, whites, and shaded flowers were all included and beautifully developed. The strain is well known, and under Mr. May's care appears to improve, not only in the flowers but in the foliage also (silver Banksian medal). Messrs. F. Cant & Co., Colchester, staged three boxes of cut *Roses*, all being fresh and bright. The following varieties were well represented—*Medea*, *Madame Lambard*, *Perle des Jardins*, *Cleopatra*, *Rubens*, *Bridesmaid*, *The Bride*, and *Niphetos*, also a box of *W. A. Richardson* in superb form (bronze

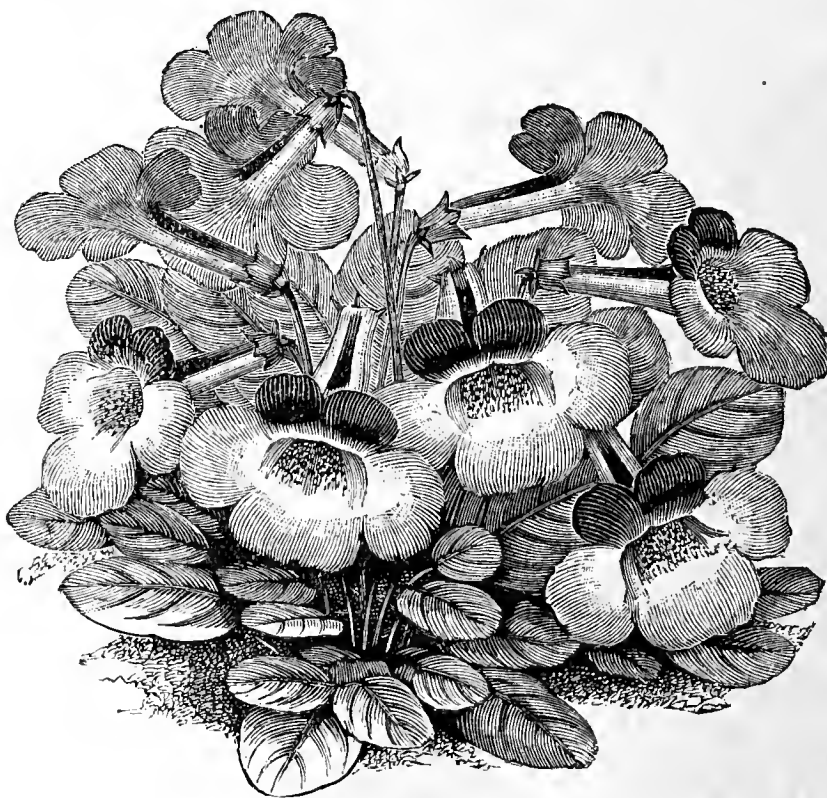


FIG. 73.—STENOASTRA CONCINNA.

Banksian medal). Messrs. Wallace & Co., Colchester, staged a few choice hardy *Irises*, *Hepaticas*, and *Tulips*, *Hepatica coerulea Warley Blue* being very attractive, as was also *Iris sindjarensis*.

ORCHID COMMITTEE.—Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. H. J. Chapman, J. Coleman, H. T. Pitt, W. H. Young, A. Hislop, E. Hill, J. Jaques, W. H. White, H. A. Tracy, J. W. Potter, H. Little, T. W. Bond, and de B. Crawshaw.

A small group of *Orchids* was arranged by Messrs. F. Sander & Co., St. Albans. Varieties of *Odontoglossum crispum* were conspicuous, with *Cirrhopetalum picturatum*, *Bulbophyllum saurocephalum*, *Cypripedium Svend Bruin*, *Oncidium Wiltoni*, and a hybrid *Cypripedium* from *barbatum* and *bellatulum* (silver Banksian medal). Mr. J. Black, gardener to N. G. Thwaites, Esq., Christchurch Road, Streatham, exhibited *Dendrobiums nobile Cooksonianum*, *n. Ballianum*, *Wiganæ*, *Wardianum*, and others.

A bright and attractive group of *Orchids* came from Mr. T. Thurgood, gardener to H. T. Pitt, Esq., Rosslyn, Stamford Hill. It com-

prised Phaius, Dendrobiums, Lælias, Odontoglossums, Miltonias, Cypripediums, Cymbidium, Angræcums, and others (silver Flora medal). Messrs. H. Low & Co., Bush Hill Park, contributed a small collection of Orchids. The plants proved by the splendid flowers they were carrying the excellence of the methods of culture. There were *Cattleya Schröderæ*, *Dendrobium atro-violaceum*, *D. Findleyanum*, *D. barbatulum*, *D. Brymeriana*, *Odontoglossum Adrianae*, *O. Andersonianum*, and *Oncidium varicosum Rogersi* (silver Banksian medal).

The number of small exhibitors of Orchids was not so large as usual, owing probably to the weather. Mr. J. T. Bennett-Poë showed *Ada aurantiaca*; Mr. J. Davis, *Dendrobium nobile album*; Mr. H. White, *Lælia Cowani* and *Dendrobiums*; Mr. A. J. Keeling, *Lælia Jongheana*; Mr. de Barri Crawshay, *Odontoglossums*; and Sir F. Wigan, Bart., various Orchids.

Certificates and Awards of Merit.

Ada aurantiaca (J. Downes).—This Orchid is far too popular and well known to call for any description (award of merit).

Apple King of Tompkins County (R. Parker).—This Apple is too well known as to need description (award of merit).

Cattleya Trianae Clara Wigan (W. H. Young).—A delicately beautiful variety. The sepals and petals are very soft blush, while the lip is deep rose with a yellow throat (award of merit).

Cyclamen fimbriata (St. George's Nursery Co.).—The papilio-flowered Cyclamen is now followed by a fimbriated-foliaged variety (award of merit).

Dendrobium aggregatum (H. T. Pitt).—A splendidly grown example of a well-known Orchid (award of merit).

Dendrobium Clio superbum (W. H. White).—This is a magnificent variety of the now well-known type (award of merit).

Dendrobium Melpomene (W. H. White).—This is a hybrid from a cross between *D. signatum* and *D. splendidissimum grandiflorum*. The prevailing colour is cream, deepening to canary yellow in the lip. The throat is deep crimson (first-class certificate).

Dendrobium nobile album (J. Davis).—This is a chastely beautiful pure white variety (first-class certificate).

Narcissus Comet (R. O. Backhouse).—A charming form, after the character of *Johnstoni Queen of Spain*, but of deeper yellow (award of merit).

Odontoglossum triumphans Raymond Crawshay (de B. Crawshay).—A superb variety; the yellow is almost wholly obscured by the varnished brown (award of merit).

Pelargonium All Flower (H. Cannell and Sons).—This is a free flowering, semi-double white, that is a decided advance on the old *Hermione* (award of merit).

Rhododendron Dr. Stocker (G. Abbey).—A beautiful white variety, with dull brown splashes on the upper portion (award of merit).

Rhubarb Daw's Champion (W. Poupart).—This variety received an award of merit a short time back, and now receives a first-class certificate.

Violet La France (I. House & Son).—A magnificent variety, with flowers of large size and excellent colour (award of merit).

Pernettya mucronata.

THIS is one of the prettiest of outdoor plants during the winter, when it is covered with its brilliant fruits, which are sometimes produced so freely as to weigh the branches down. It is a native of the extreme south of South America, and is thoroughly hardy in this country, growing freely in almost any situation. It should be planted in a soil that contains a good proportion of peat, and which is otherwise of a rather light nature. Although single plants show well when they have attained their full size, it is better to put six or eight plants together, when they can be seen to the best advantage. When fully developed it forms a plant about 2 or 3 feet high, and as much, or more, in diameter.

The leaves are evergreen, leathery in texture, about half an inch long, smooth and shining on both surfaces, sharply pointed, and rather broadly toothed on both margins. The flowers are small and white, and are freely produced singly in the axils of the leaves, being followed by the globular fleshy fruits, which are the chief beauty of this plant. Normally the fruits are of a bright red, but now many varieties can be obtained with fruits varying in colour from almost pure white to lilac, rose, purple, deep crimson, and almost black. Such names as *fructu lilacina*, *fructu rubra*, and *fructu purpurea* are sufficiently suggestive of the colours of the fruits.

Some of these varieties are extremely pretty, more especially when they are planted to contrast with each other, but others differ little, if any, from the type, and it is difficult to understand why they have received a distinctive name. The fruits are very rarely, if ever, attacked by birds; an important point when dealing with plants which carry their fruits, as the *Pernettya* does, throughout the winter. It is easily propagated by seeds or by division of the old plants, but these divisions require careful nursing for a time.—C.

The Young Gardeners' Domain.

Forcing Peaches and Nectarines.

PEACHES and Nectarines are so closely allied that they are almost invariably classed together, both succeeding in the same house under identical treatment. They are deservedly held in high esteem, and a house of healthy trees laden with fruit is a most pleasing sight, which repays all the care and attention that may have been bestowed.

Before forcing operations are commenced the houses should be well cleaned, washing the glass and woodwork, and lime-washing the walls.

Not much pruning will be required at this season, but the trees should be examined, shortening any shoots that require it, or removing them altogether if too crowded. Dress the trees with some insecticide for the destruction or prevention of the attacks of scale and other insect pests, then tie the shoots to the trellis as evenly and straight as possible. This having been done the border will require attention. If the surface soil is not in good condition remove as much of it as possible without injuring or unduly exposing the roots, replacing it with fresh loam, to which may have been added a good proportion of wood ashes, some lime rubbish, and bone-meal or other artificial manure, making it firm. If



FIG. 74.—MITRARIA COCCINEA. (See page 271.)

the border is at all dry it should receive a thorough watering. It may also be necessary to fumigate the house to keep green fly in check until after the trees have finished flowering, when the syringe will effectually stay the progress of that pest.

In starting the houses it will be necessary to have in view some definite date on which it is desired to have ripe fruit, and from the day of starting to the time when the fruits are required five or six months, according to the variety, should be allowed. A minimum night temperature of 45° ought to be maintained, with a rise of 5° by day from fire heat, with a further advance from sun heat of 10° to 15°, or even more, with full ventilation. Admit a little air at 60°, and increase or decrease the amount as the temperature rises or falls. Damp the borders and paths as often as necessary to supply atmospheric moisture. The trees may also be syringed on bright afternoons, closing early to obtain the benefit of the sun's rays.

Trees that are not subject to bud-dropping are often allowed to expand a large quantity of bloom that is not required. This is an unnecessary effort, and an expenditure of strength on the part of the tree. Before the blossom buds expand it would be well to thin them where they are too crowded, removing those which on account of their position are not available for setting. When the trees are in bloom the night temperature may be raised to 50°, with a corresponding rise by day, allowing a moderate amount of air on fine bright days. Keep the atmosphere a little dryer, but an arid condition is injurious to the floral organs; the house should therefore be damped down occasionally on bright days.

With early forced trees it will be necessary to aid the distribution of pollen by artificial means, that the flowers may be properly fertilised and a good set of fruit secured. For this purpose a camel's-hair brush is the most suitable, passing it gently over the flowers when the pollen is ripe, the operation being performed about midday. Some varieties do not produce pollen so freely as others, but by having in the early house especially one tree of some variety that produces pollen plentifully it may be conveyed from that to other trees, and the perfect pollination of the flowers be thus insured.

When it is seen that the fruits have commenced to swell raise the temperature to 55° by night and to 60° by day. Syringe the trees vigorously on fine days, in the early morning and again at closing time, damping the paths and borders to maintain a humid and genial atmosphere, which is so essential to the progress and well-being of the trees.—S. P.

(To be continued.)

Strawberries in Pots.

STRAWBERRIES for forcing should be layered into 4-inch pots in July. The runners ought to be selected from plants that have flowered the same season, as if from those that have been barren they will not fruit when forced the next spring. In August the plants should be repotted into 6-inch pots, the compost consisting of one-half good fibrous loam, pulled to pieces with the hand, and leaf mould, wood ashes, and dried cow manure in equal parts, the whole passed through a sieve, adding a sprinkling of soot and bonemeal when mixing.

The pots should be clean and well crocked, the plants being potted firmly, and the pots stood on a bed of coal ashes in the open, where they can be frequently syringed. Strawberries at all times should be watered carefully, and never be allowed to become very dry. In October they must be removed to a cold frame or pit, where they will be near the glass; they must be freely ventilated on all favourable occasions throughout the winter.

In most establishments it is usual to commence forcing Strawberries about the 1st of January. The best plants should be selected, the pots washed, and the surface soil removed and be replaced with some good compost. The plants ought to be placed on a mild hotbed in a pit or forcing house for a few weeks to encourage root action, but the temperature must not exceed 50°. When the trusses appear the plants should be removed to an early vinery shelf, and when the flowers are fully expanded they may be fertilised about midday with a rabbit's tail tied to a stick.

When the fruit has set the plants should be syringed twice a day until the fruit shows signs of ripening, when syringing must be discontinued. Strawberries should be fed with liquid manure about twice a week; night soil, carefully diluted, is most valuable if applied when the fruit is swelling. Some of the best Strawberries for forcing are Royal Sovereign, President, Sir Charles Napier, and Vicomtesse Hericart de Thury.—F. W. P.

Poinsettias.

THE Poinsettia ought to have a place in every collection of stove plants. By the present moment the old plants will have had a good season of rest, and may be brought forward and gradually started into growth, once more keeping them as close as possible to the glass to insure sturdy growth, which, to my opinion, is one of the most important points. I would recommend two sets of cuttings to be rooted, one during the latter end of April or beginning of May, and the other at the beginning of July. From the July stock we had the honour of being awarded a certificate of merit for six well grown Poinsettias at the Bristol Mutual Improvement Association on November 30th, the plants standing 18 inches from the tables, and the largest bracts being 17½ inches, and the smallest 15 inches across.

Poinsettias should be rooted singly in thumb pots, plunging them into a frame stood on a hotbed. When they have emitted roots they must be promptly removed to suitable shelves, and they should on no account be allowed to get root-bound, or they will soon lose the foliage, which, when the plants are well grown, extends upwards from the rim of the pots. From thumbs I generally shift them into 4-inch, and from the latter to 6-inch pots, using for the cuttings a very light mixture, but for other pottings equal parts of peat, loam, and leaf mould, with the addition of a little artificial manure and coarse sand. After they have been potted for a day or so they should be syringed, and as soon as they begin to root into the new soil they may be removed to a frame, keeping them well up to the glass, and avoiding cold draughts.

As soon as the weather becomes cold at night the plants should be placed in one of the warmer houses, keeping them well up to the light, and feeding them occasionally with weak liquid manure made from soot and cow excreta, which will assist them very much in pushing their bracts. These will last some time if cut and put in water, or even if the plants are required for indoor decoration; their colour looks very brilliant during the Christmas festivities. After the bracts are over the old plants should be gradually dried off and stored in some warm corner.—W. L., King's Weston.

Trade Catalogues Received.

H. Canuell & Sons, Swanley.—*Floral Guide*.

J. Cheal & Sons, Crawley.—*Dahlias*.

J. R. Pierson Co., Tarrytown-on-Hudson, New York.—*Seeds and Plants*.



Hardy Fruit Garden.

Protecting Fruit Blossom.—The cold weather experienced during the past month has been the means of checking the rapid development of the bloom of Apricots, Peaches, and Nectarines. This is an advantage, as the later the trees bloom in spring the better chance there is of securing a good crop. The weather, however, is always uncertain at this time, and there may occur a warm and sunny period during which the flowers will expand rapidly. Following immediately upon this keen east winds and stormy weather may prevail just as the blooms have fully opened. It is at this juncture that protection is needed the most. This must be anticipated, and protecting material arranged in time. The best protection is afforded by glass or wooden copings, from which should be hung lengths of tiffany, scrim canvas, or woollen netting. The material ought to have brass rings attached at the upper ends, and these should run on a slender iron rod, by which means the material may be drawn on one side when not required to cover the trees.

Another efficient means of protection, when a coping is not available, is to lay smooth poles against the walls, firmly fixing them at the base, and arranged 8 or 10 feet apart. Across these stretch the protecting material, which should not be a permanent fixture, unless the material used is fish netting. This can be employed as a permanent protection—that is, from the time the blossoms expand until the foliage has well developed, when artificial protection is unnecessary. To be thoroughly effective fish netting should be used double or treble thickness. In the absence of poles on which to hang the netting it may be depended from the stone coping of the wall, but ought not to touch the trees, as in the event of wind damage might result to the blooms or young fruit. The temporary expedients which are sometimes employed, such as evergreen sprays placed among the branches, are not to be depended upon to afford efficient protection.

Feeding Old Fruit Trees.—Sewage water, the contents of cesspools, is admirable nutriment for pouring on the soil over the roots of large old fruit trees. By giving a good application now, it will sink into the moist soil and convey rich and valuable plant food ready for the roots to imbibe when they put forth new fibres incited into activity by the warmth of spring. Old trees on grass, which cannot so readily be supplied with manure, will be largely benefited. The best means of conveying it down to the roots is to make holes at intervals with a crowbar, and pour the liquid into them, filling up several times. The strength of the liquid is immaterial. It will not damage the roots, especially as the soil is moist.

Feeding Bush Fruit.—Gooseberries and Currants that are in free bearing condition appropriate considerable quantities of food from the soil during the developing of the fruit, hence it is desirable that suitable nutriment should be within reach of the roots when their demands are greatest. It is advisable, therefore, if liquid manure is available, as sewage water or drainings from stables, cow sheds or manure yards, to apply it now, well moistening and enriching the soil as far as the roots extend.

Fertilising Strawberries.—Fresh pungent soot scattered thinly round the crowns and more liberally on the soil over the roots at the rate of a peck per rod is exceedingly stimulating food for Strawberries. A dressing of guano 1 oz. to the square yard forms rich and stimulating diet. Liquid manure may be given occasionally, and a good dressing of manure laid down between the rows.

Outdoor Figs.—Trees on walls may now be regulated and trained after pruning, which should consist of cutting out the old exhausted shoots or weakly branches, retaining the young current year's growths in sufficient quantity to occupy the available space, leaving them at full length.

Planting Strawberries.—Young plants have time to become fairly well established before the advent of hot, dry weather. They should, however, be inserted on good rich ground. If the roots are devoid of adhering soil spread them out carefully in planting, covering with fine material. If plants can be lifted from nursery beds with good balls of roots they will suffer little or no check in removal. The ground should be made firm previous to planting, and if burnt refuse is mixed with old potting soil the compost forms a good bed into which the first new roots can readily push. Some such material is necessary in stiff ground in order to give them a fair chance. Water well should the weather be dry.

Thinning Fruit Blossom.—Where practicable on small trees or cordons of choice varieties it is an excellent plan to remove superfluous blossoms. All fruit trees produce blossoms in positions where it is quite inconvenient for fruit to set, swell and develop. These superfluous blossoms which lay behind the branches and shoots ought first to be removed. Follow with a general thinning out of the remainder. This removal will considerably benefit Peaches and Nectarines, Apples and

Pears, which invariably produce more bloom than desirable, rendering the chance of securing a good set rather improbable.

Forking and Hoeing Fruit Borders.—The practice of digging between fruit trees and bushes is not to be recommended, as it is liable to mutilate the fibrous roots if they are present near the surface. Pointing the soil over among bushes and between large trees may be adopted, but it must not be carried out deeply. Ground that has been previously treated will now require nothing further than breaking the surface with a hoe in order to cut down seedling weeds, and make a pulverised surface.

Fruit Forcing.

Cucumbers.—On bright days, especially after a period of dull weather, shade from powerful sun will be necessary to prevent flagging, but it should only be used for a few hours at the hottest part of the day. Plants in full bearing will need assistance with top-dressings of fertilisers or applications of liquid manure, adding fresh warmed soil to the beds as the roots protrude. Thin out the exhausted growths of plants that have been in bearing some time, and encourage new bearing shoots. If worms are troublesome expel them with lime or soot water, a peck to 30 gallons of water, stirring well, letting it stand forty-eight hours, then watering with the clear liquid. Subdue canker at the collar and in the old growths by rubbing quicklime into the affected parts. Damp the floor in the morning between seven and eight o'clock, and again in the afternoon about three o'clock, syringing the foliage gently on warm afternoons, and keep liquid manure in the evaporation troughs. Attend to stopping, thinning and training, at least once a week. Maintain a night and dull-day temperature of 70° to 75°, 80° to 90° by day with sun, and close sufficiently early to rise between the latter degree and 100°, with an abundance of atmospheric moisture. Ventilate moderately and early, avoiding sudden changes of temperature, also currents of cold air, which cripple the foliage and cause the young fruit to become deformed and to swell irregularly.

Pits and Frames.—Cucumbers in these require the growths trained rather thinly, pegging them down as required, stopping one joint beyond the show for fruit, or the leading growths about 1 foot from the sides of the frame. Maintain the requisite heat by renewing the linings. Add fresh warmed soil to the hillocks as the roots extend. Be moderate in the application of water, as the nights are as yet cold, and employ thick night coverings. Admit a little air early so as to have the foliage dry before the sun acts powerfully upon it. The heat through the day may range from 75° to 90° with sun. Close early in the afternoon, no harm accruing if the temperature rise to 90°, or even 100°, provided there is no rank vapour. If there is danger from it admit a little air constantly, a small opening being sufficient to allow it to escape, as it is very light.

Melons.—The earliest plants will have fruit set or setting on the first laterals. A rather drier atmosphere, and no more water than to prevent flagging, with an increase of temperature of 5°, and a circulation of warm air, are desirable during the setting period. The flowers should be fertilised every day when fully expanded, pinching out the points of the shoots one or two joints beyond the fruit. When the fruits are set, and the size of Walnuts, give the bed a thorough watering, and in a day or two add soil to the sides of the ridges or hillocks, pressing it firmly, and again supplying water or liquid manure. The soil, water, or liquid should be warmed to the temperature of the bed. Stop the subsequent growths to one or two joints, and prevent overcrowding by rubbing off shoots for which there is not room for the foliage to have full exposure to light. Do not overcrop the plants, but leave the fruit proportionate to the vigour, say two on weakly, three or four on vigorous, and very strong plants may carry six fruits.

A night temperature of 65° to 70°, 75° by day, ventilating from that point, increasing with sun to 85° or 90°, closing early to secure the latter degree, or even rising to 95° or 100°; bottom heat 80° to 85°. Damp the house in the morning, syringe moderately by or before three o'clock on bright warm afternoons, damping the paths and walls in the evening. Keep the evaporation troughs filled with liquid manure. Plants in narrow beds will require plenty of liquid nourishment, always in advance of the mean temperature of the house, and top-dressings of rich material.

Successional Plants.—Train the growths regularly, remove every alternate lateral, rubbing them off directly they are perceived, the remainder being trained to the right and left of the stem. Pinch out the points of the primary shoots after they have extended two-thirds of the required distance. Increase the supply of moisture both at the roots and in the atmosphere as the days lengthen. Pot seedlings, shift into large pots, and plant out as required. Sow more seeds to afford plants in proportion to the wants of individual establishments. In pits and frames a bottom heat of 80° should be secured to plants that are growing freely, renewing the linings as required. In newly made beds the bottom heat should be about 80°.

Peaches and Nectarines.—*Earliest Forced Houses.*—When the very early varieties, such as Alexander, Waterloo, Early Beatrice, and Early Louise Peaches; Advance, Cardinal, and Early Rivers Nectarines give indications of ripening syringing must cease, and the leaves that shade the fruit be drawn aside, raising the fruit, if necessary, on laths placed across the wires of the trellis, so that its apex will be directly to the

light. Such varieties as Hale's Early, Stirling Castle, Royal George, and Dymond Peaches; Lord Napier, Stanwick Elruge, and Goldoni or Humboldt Nectarines, on the other hand, must not be hurried until the stoning is completed, continuing the temperature at 60° to 65° at night and on dull days, 70° to 75° by day with sun heat, and free ventilation, avoiding sudden fluctuations and depressions.

Regulate the growths, not having those for future bearing too close, but give them ample room alike to benefit the fruit and the wood. Shoots disposed to grow more than 14 inches may have the points pinched off, but extensions should be trained in their full length. When the stoning is completed regulate the crop for the final swelling. Vigorous trees may be allowed to carry more than one fruit to each square foot of trellis, while weakly trees should not be permitted to bear so many. Supply liquid manure to weakly trees, the inside border in any case being kept properly watered, mulching the surface with a little well-decayed manure, in order to secure uniform moisture and favour the surface roots.

Trees Started at the New Year.—Thin the fruit to a few more than is required for the crop. Avoid sudden checks by judicious ventilation, cold air in the daytime and a high temperature at night proving fatal to the fruit stoning. A night temperature of 60° to 65°, 5° less on cold nights, and 65° by day in dull weather, with 70° to 75° from sun heat, is quite sufficient, ventilating from 65°.

THE BEE-KEEPER.

Work in the Apiary.

As a guide to other bee-keepers it may be of interest to state what is now being done in our apiary. It is a recognised fact that to be successful in any business preparations must be made in advance of requirements. We are therefore doing all that is possible towards the desired end. At present we are overhauling spare hives. Those that require it are repaired and made thoroughly sound, as an unsound hive often means the loss of a strong colony of bees. This must be guarded against. After the hives are repaired they should receive at least two coats of paint made from the best white lead. This must be well worked into all the crevices, and should there be any small cracks in the wood they ought to be filled with putty after the first coat of paint. If this work is well done the hive will withstand the various changes in the weather for at least two years.

The inside of hives that have been in use for a long time should also receive attention. We do not recommend the interior to be painted, as the moisture will condense on the sides if this is done. Our usual plan is to use a new hive for a few years without any dressing whatever inside. But at this season when from various causes we have several old hives on hand after being treated as above, the propolis is scraped off the sides and the whole of the interior receives a dressing of Stockholm tar and carbolic acid. This mixture must be put on hot, and the plan we adopt is to place the tar in an old saucepan over a clear fire, and is made of the consistency of paint by adding carbolic. An ordinary paint brush is used for applying the mixture, which should be well worked into all the crevices. This will have the effect of destroying any germs there may be, and will also preserve the wood and sweeten the hive. One application will be sufficient. If the fire is not clear and bright there is a danger of the mixture bursting into flame. If this takes place the saucepan should be immediately placed on the floor and if the back of a shovel is put on the top the flames will be overpowered at once.

The hives should be placed in the open air for a few days, and the smell will soon pass off; and the hives will be ready for use when required. The advantage of doing them at this season is—they will be ready for the early swarms, or for whatever purpose they may be required. Some hives in our apiary that were recently treated in this manner have been in constant use for nearly twenty years.

Preparing for Another Season.

Preparations should now be made for the coming season. Whether it will prove good or bad from a bee-keeper's point of view remains to be seen, but we must prepare. A general stocktaking should take place, so that when the necessary things are required they will be ready to hand. If an increase of stocks is contemplated the requisite hives should be obtained, either by making them on the lines of the approved hive at present in use in the apiary, or by ordering them from some well-known maker. These should be obtained unpainted. It will then be possible to see if the wood is of good quality. The painting may afterwards be done at home. There is often a difficulty in obtaining goods during the height of the season, when manufacturers are working at high pressure. Sections may be obtained in their original cases; these are usually imported in boxes holding 500,

and are much cheaper when obtained in this manner. If kept free from dust they will remain in good condition for an indefinite period.

It is a great saving of labour to the bees to use comb foundation; sufficient should therefore be obtained to last throughout the season. It will also keep in good condition for several years. All that is required if it becomes dry and brittle is to place it in the sun for a few minutes. Holding it before the fire will have the same effect. It is not necessary to use the thick foundation often recommended for the brood combs, and which only averages six to eight sheets standard size to the pound. It thus becomes expensive when numerous colonies have to be supplied. We always use the thin for all purposes, which averages sixteen sheets to the pound.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Matricaria eximia Golden Ball (*Somerset*).—It will be best to treat this as a half-hardy annual, sowing as soon as possible in heat; prick off into boxes or pans to strengthen, and plant out at the end of May. It will flower well in autumn. Seeds may also be sown outdoors at the end of April. With good treatment these plants will also flower the same summer or autumn.

Schizophragma hydrangeoides (*Climbing Hydrangea*) (*Idem*).—This evergreen greenhouse shrub, of climbing habit, which was introduced from Japan in 1879, requires to be grown in good well drained soil on a sunny wall. As it is hardy it may also be grown outdoors on a sunny sheltered south wall. Plant in April. It is self-clinging, and will reach a height of 12 to 18 feet. The flowers, which are produced in autumn, are pink.

Pressing Wild Flowers (*Tyro*).—The principal point needing attention is in the drying, as this process must be performed gradually, or the characters of the plants will not be preserved. Thick porous paper is used, and the specimens must be carefully spread out in as natural a manner as possible, preserving the form of flowers and leaves, and in the case of small plants the natural habit. The sheets of paper and specimens should then be placed in small piles, with a stout board below, and one on the top; upon the latter weights can be placed to provide the necessary pressure. The specimens must be frequently examined in the early stages, and if there is much moisture on the paper fresh sheets should be supplied and the others dried before being used again. Do not be in too great a hurry to complete the process, some plants require a long time, and if any attempt is made to "mount" them before drying is completed it will cause much after trouble. When, however, it is seen that the substance of the plants is thoroughly dried the specimens can be secured to stout sheets of white paper, by means of thin glue or strong gum applied to the principal parts of the leaves or stem, or what is preferable, by means of narrow strips of paper placed across the stem, leaf and flower stalks, and fixed to the paper by their ends with the glue. Always employ large sheets of paper, so that ample room can be allowed to the specimen, and do not fix them all in the centre of paper, but let some be near the sides, as it will be more

convenient for arrangement in the herbarium, as it equalises the pressure. At the base of the sheet the botanical and common name of the plant should be given, its natural order, and the place where it was found, with the date.

Rose Seven Sisters (*H. S. J.*).—Yes, there is a Rose bearing the common name of Seven Sisters. It is a variety of *Rosa multiflora*, a very beautiful, free-growing and flowering class of Rose, introduced into this country from China over three-quarters of a century ago, under the name of *Rosa multiflora Grevillia*. The name of Seven Sisters was no doubt applied to this Rose in consequence of the great diversity of colours displayed in the blooms, which, as you correctly state, grow in clusters of seven or more. As the blooms expand, one will assume a crimson, one a purple, and another a rose colour, and when matured and beginning to fade, the three colours may be seen blended beautifully together in a single bloom. Unfortunately these Roses are not sufficiently hardy for general planting out of doors on account of their disposition to start into growth early in spring, and thus getting their shoots killed by the frost. On a well-sheltered south wall the Seven Sisters would do well if the precaution is taken to cover it up with mats during winter and early spring. Planted out in a cool greenhouse or conservatory and allowed to ramble along the roof it would succeed better still.

Fairy Rings on Lawns (*G. S. C.*).—The so-called fairy rings are caused by fungi, the most common being the Fairy-ring Mushroom or Champignon, *Marasmius oreades* (fig. 75). It grows on lawns, grassy hills, wind swept pastures, and amongst the short grass of roadsides. Many other fungi are capable of making fairy rings, that is, they grow

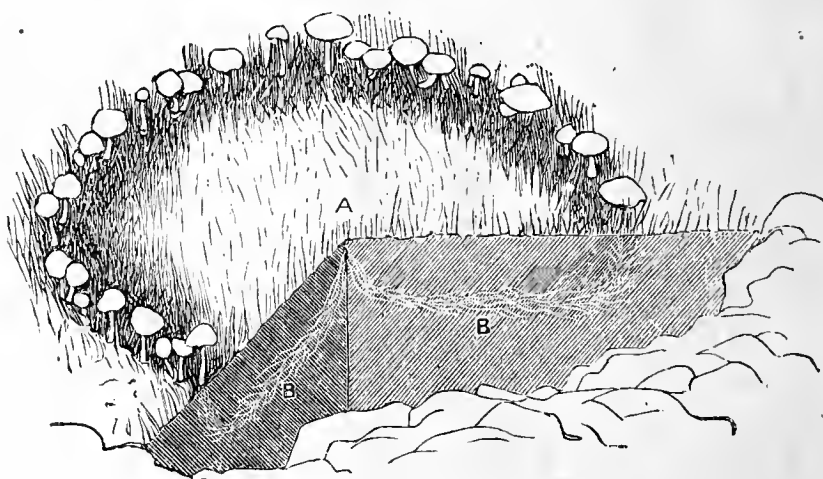


FIG. 75.—FAIRY RINGS.

in circles, that of the species named being usually narrow and regular in outline. The ring probably starts from a single fungus (A), which has grown from wind-carried spores, and the growth of the spawn from it (B) in the ground renders the spot unfit to produce another fungus of the same class. When the ring of fungi dies it acts as a rich nitrogenous manure for the grass. This circle contrasts strongly with the adjoining grass infested at the root by the spawn of the fungus, which is very sickly and yellow. The rings are not always regular, being broken here and there, according as circumstances favour the development of the spawn. The large fungi giving rise to fairy rings do not often occur on lawns. The St. George's Mushroom, *Tricholoma gambosum*, which appears in spring, produces very bold fairy rings, the spawn eating up the roots of the grass, and the fungus itself manuring the circle in a very decisive manner. The common Mushroom does not give rise to fairy rings, but the Horse Mushroom, *Agaricus arvensis* often produces rings, and other instances of ring formation by fungi are well known. These rings do not occur in rich pastures to any marked extent, hence manuring may be said to be the best means of getting rid of them, the soil being made equally rich all over as that of the fairy ring. This is sound in practice, for on a lawn the fairy rings were a great eyesore, and a good dressing of thoroughly decayed manure in February, the rough being raked off at the end of March and the lawn rolled, obliterated them, the ground being top-dressed with a mixture of soot, air-slaked lime, and wood ashes in equal parts by measure, a peck of the mixture being used per square rod, after clearing off the rough parts of the manure. In another case excellent results followed the use of lawn manure at the rate of 3 to 4 ozs. per square yard. As to taking out the soil where the fairy rings are it is probable they would appear again, for it is hardly likely the whole of the mycelium would be removed. Besides, there will be plenty of spores about, and it is only a question of their being wind-carried on the lawn to start fresh rings. We therefore advise the manuring of the lawn, and as a special means of destroying the mycelium of the fungus make holes with an iron rod or crowbar about 6 inches apart and deep, extending 6 inches outside the ring as well as in it, and fill these with a solution of Jeyes' fluid, a wineglassful or 2 fluid ozs. to about 4 gallons of water, applying also to the surface by means of a rose. When soaked in the holes may be filled with good soil made firm. Then manure the lawn all over or supply a lawn manure according to the instructions supplied.

Spots on Tomato Leaves (Cross).—The spots on the leaves are caused by the spot fungus, *Cladosporium fulvum*, syn. *Lycopersici*, but the spores so far have not developed, which is not uncommon early in the season and in a rather low temperature. By maintaining a rather high temperature from sun heat, but with a circulation of air, and keeping a gentle warmth in the hot-water pipes, so as to keep the air in motion, and even admitting a little ventilation to promote it, there is not much to fear from the spread of fungus. We should, however, maintain a night temperature of 55°, and 60° to 65° in the daytime from fire heat, ventilating a little, and allowing a good advance from sun heat, with proportionately increased ventilation. As a further safeguard a little sulphur may be used on the hot-water pipes, as the fumes given off, even scarcely perceptible ones, are inimical to fungoid germs.

Tomato Leaves Turning Purple (Idem).—The purple hue is peculiar to some varieties, and a characteristic of good health rather than otherwise. It has been attributed in its bluish form to an excess of iron in the soil, but this, in your case, can hardly have resulted from the ground last year having a sprinkling of sulphate of iron. The tendency of sulphate of iron is to promote the chlorophyll or green colouring matter of leaves and young growths, but it also aids the peculiar characteristic purplish hue of some plants. Some growers consider the purple due to potash. Possibly a deficiency of manure or available nitrogen in the soil may tend to increase the purple colour. The foliage, however, is not deficient in substance, and the growth appears free so that we do not advise the application of manure at present, unless it be a very light sprinkling of dissolved bones. The water employed ought to be of the mean temperature of the house, as cold water or that of minimum heat tends to check the growth.

Clanthus puniceus (M. B.).—This plant requires an ordinary greenhouse temperature such as you appear to have provided, and its bright red flowers are usually produced freely. Possibly the plant is in too rich a soil. A rather sandy loam is the best, and it is only when the root space is restricted that manurial assistance is needed. When grown in pots, for instance, and strong, well-rooted flowers have been obtained, a little well-decomposed manure incorporated in the soil is beneficial, or occasional supplies of weak liquid manure will be equally helpful. An important point is to syringe the plant freely while it is growing, as it is liable to be infested by red spider if that be neglected. It is also desirable to harden and mature the growths by moderate exposure to sun and liberal ventilation. During winter much less water is needed.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (T. S.).—1, *Odontoglossum gloriosum*; 2, *O. Edwardi*; 3, *O. grande*. (J. L.).—1, *Libonia floribunda*; 2, *Cytisus racemosus*; 3, *Iris fimbriata*; 4, *Primula verticillata*; 5, *Anthericum variegatum*. (Young Orchid Grower).—1, *Cymbidium eburneum*; 2, a good form of *Cattleya Trianae*; 3, *Cypripedium barbatum*; 4, *Cymbidium Lowianum*; 5, *Angraecum sesquipedale*.

Names of Fruits (H. H.).—1, Winter Hawthornden; 2, Grange's Winter Pearmain; 3, Bess Pool.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
" Californian, per case	8 0	14 0	Oranges, per case ...	5 0	15 0
" Nova Scotian, barrel	15 0	22 0	" Californian, seedless	16 0	24 0
Cobnuts per 100 lb....	80 0	90 0	Pears, Californian, case...	6 0	9 0
Grapes, black ...	2 6	5 0	Pines, St. Michael's, each	1 0	6 0
" Muscat... ..	4 0	8 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ferns, small, 100 ...	4 0	to 8 0
Arbor Vitæ, var., doz. ...	6 0	36 0	Ficus elastica, each ...	1 6	7 6
Arums, per doz. ...	8 0	12 0	Foliage plants, var., each	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Boronia, doz. ...	20 0	24 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Ocotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot	0 8	1 0
Cyclamen, doz. ...	6 0	8 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	0 6	1 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	8 0	18 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mimosa, per bunch ...	1 6	to 2 0
Arums ...	2 6	3 6	Mignonette, doz. bunches	6 0	8 0
Asparagus, Fern, bunch...	2 0	2 6	Narcissus, white, doz. bun.	2 6	3 6
Bouvardia, bunch ...	0 6	0 9	" Yellow, doz. bunches	2 0	3 0
Carnations, 12 blooms ...	2 6	3 6	Odontoglossums ...	5 0	7 6
Cattleyas, per doz. ...	10 0	12 0	Pelargoniums, doz. bnchs	8 0	12 0
Daffodils, double, doz. bnch	6 0	8 0	Roses (indoor), doz....	6 0	8 0
" single, doz. bnch.	6 0	12 0	" Red, doz. ...	6 0	8 0
Eucharis, doz. ...	2 0	3 0	" Safrano, packet ...	3 6	4 0
Gardenias, doz. ...	6 0	8 0	" Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			" Yellow, doz. (Perles)	5 0	7 6
bnchs. ...	6 0	9 0	" Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	5 0	6 0	" English (indoor):—		
Lilium Harrisii, 12 blooms	6 0	8 0	" La France, doz. ...	6 0	12 0
" lancifolium album ...	3 6	4 6	" Mermets, doz ...	3 0	6 0
" rubrum...	3 6	4 6	Smilax, bunch ...	5 0	6 0
" longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch	0 6	0 8
Lilac, white, bundle ...	4 0	6 0	" yellow, bunch	1 0	1 6
" mauve, bundle ...	6 0	8 0	" bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	" dark, French, doz.	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	" " English, doz.	2 0	3 0
" Yellow, doz. bnchs.	4 0	6 0			



Pigs.

A SHORT word, but full of meaning. We are called a nation of beef eaters, but really we are also quite, if not more, indebted to "Mr. Pig" for our main meat supply. Of course, useful as he is, he is not of such absolute importance to the upper and middle classes as he is to the working man, but our breakfast tables would present a poor appearance without some adjuncts from pigdom. He is far more the poor man's animal than the cow. He can be housed at so little expense, can be bought at less, will eat what the cow despises, and every ounce of him can be consumed with relish by the man and his family. In a country like England, where cold weather is more in evidence than hot, fatty substances are required to keep the system warm, and next to butter there is no fat so pure and good as that of pig. He is easily cured and easily cooked, and is so "relishable." Of course, he is "mortal," like all live stock, but at the same time he might be called, in insurance parlance, a "healthy life." He is essentially an animal for the country cottage, where his sty need not be quite at the very door. Town pigs are odious and expensive. All food has to be purchased, and then the areas are so limited. Pig and garden should go together. All he takes from the garden he amply repays by the value of his excellent manure. His diet is much

Covent Garden Market.—March 28th.

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Lettuce, doz. ...	0 10	to 1 2
Asparagus, green, bundle	5 0	5 9	Mushrooms, lb....	0 8	0 10
" giant, bundle	15 0	20 0	Mustard and Cress, punnet	0 2	0 0
Beans, Jersey, per lb..	2 0	2 6	Onions, bag, about 1 cwt.	4 0	8 0
" Madeira, basket ...	2 6	3 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz....	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, ½ sieve...	1 6	2 0	" Teneriffe, cwt....	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz.	0 8	0 10
Carrots, per doz. ...	3 0	4 0	" French, round, doz.	1 6	0 0
Canflowers, doz. ...	3 0	4 0	Seakale, doz. baskets ...	15 0	18 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bnshel...	3 0	5 0
Endive, doz. ...	1 6	2 0	Sprue, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs.	4 6	5 6
Leeks, bunch ...	0 8	0 0	Turnips, bunch...	4 0	6 0

improved by the addition of any rough coarse grass that the children may obtain from hedge bottoms or roadsides.

There are several erroneous ideas respecting a pig's habit and bill of fare. He has the character of thriving in dirt. Well, the dirt is not his fault; it is to his credit that he does so well among it, but clean him and make him comfortable and he repays you at once. Too little attention is often paid him. He has to put up with bad accommodation, and with little or no bedding. His abode should at least be weatherproof, and good bedding is essential to his comfort. He has no thick coat of wool or hair to keep off sun or cold, and he needs protection from the hot glare as he does from the biting frost.

We require a variety in our food. Let it be ever so good the same dish soon palls; the system requires a change; the blood must be purified, and it is one of the greatest of mistakes to keep the pig on hard corn or concentrated meal all the year round. Potatoes are a great stand-by, and they make a most excellent food steamed and mixed with meal. We should say there is no bacon in the world that beats that produced from barleymeal and Potatoes. But steaming should not be confined to Potatoes. If there be plenty of Turnips and Mangolds to spare, they make excellent cooked food. By the way, if there be any Mangolds over in summer—that is, spared from the ewes and lambs—it will well pay to give them to the pigs. Pigs must have change of food, and it is the greatest mistake to feed them so much on hard dry corn. Pigs have a nasty habit of rooting about too much, therefore it is almost necessary that their green food be brought to them; and as soon as there is any green food astir on the farm the pig should have his share. Rye will come in first; Clover and Tarcs if they can be spared, and as soon as a harvest field is cleared let the pigs have a run, with a day lad as tenter.

It is a great mistake to keep young pigs too long about. Small weights of good quality are always in demand, and to be of good quality they must never be allowed to go back. If the sow be well fed they leave her in prime condition, and it then depends on the farmer whether or no they keep that condition. "Small profits and quick returns" should be the motto. Of course some have to be kept to supply the household with bacon, and a farm household is rather a wide term, as in many places the master, by agreement, supplies his labourers with so many stones of bacon per annum; also the foreman requires 25 stone or thereabouts per annum for each waggoner he boards. It would not pay, of course, to kill for them prime young porkers; strong big pigs are wanted, say from 25 to 30 stone weight. But the money to be easiest made will come from those porkers which are sold fat and young.

When the little pigs are about three weeks old they will begin to eat, and should be encouraged so to do, but the food must be such as they can manage easily without detriment to their teeth. Grains of soaked maize ought to be scattered about, and a few Oats. The piglings should be able to get at their food without interference from the sow, and ought to be provided with plenty of slop in the way of skimmed milk, or failing that thin barleymeal water. Plenty of sunshine, and a run on grass if possible, and plenty of muscle and bone-forming food. Oats, barleymeal, and Peas come first in order of value. Maizemeal tends too much towards fat, and fat must not be encouraged at the expense of growth. Bran should not be given till the pigs are at least three months old. We put much stress on the value of old milk. In no other way can milk be made to pay so well as in the insides of little pigs. In Denmark this has been proved by a series of elaborate experiments. It stands to reason that in feeding sucking pigs well two ends are gained. The pigs are always on the upward move, developing quickly, and getting out of the way, and there is not such a strain on the system of the sow—the better her condition the sooner she will be fit for other duties. It may be breeding again, or it may be the salting tub, at any rate she has lost no time. At one time or another we have heard a good deal of pig ailments, and our only surprise is that we have not heard more. The matter in a great measure is in our own hands; the remedy lies with ourselves.

We go back to the first point, sanitation. Unhealthy dwellings

make unhealthy inmates; impure water, bad food always work out to the same result, and we are beginning now to see that it is little use to lock the door when the horse is stolen. Of course we know how difficult it is to keep free from horrible epidemics like swine fever or foot and mouth disease. Swine fever being difficult of identification in the early stages, may get a hold on a herd before the owner is really aware of the deadly enemy. We have a great objection to the purchase of pigs from unknown sources in the open market; the risks are so tremendous.

Happily of late years we have been free from "foot and mouth," although there has just been a local outbreak in Norfolk. It is a catching complaint, and is easily communicated from "bos" to "boar," so that in case of any outbreak among the horned cattle the pigs should be at once isolated. If only farmers would use a little more lime, either on the floors or as a wall wash, and a few simple disinfectants, they might save themselves many a funeral, and many a long farrier's bill.

Work on the Home Farm.

Except for a heavy snowstorm on one afternoon we have had a fine week. The snow soon melted and did no harm; in fact on land which was recently worked and drying quickly it did good.

Drilling is proceeding rapidly everywhere, and Barley is going in fairly, but we have seen no March dust this season, and the land is hardly so warm as it should be; in fact we want more sunshine. These cloudy skies and north-east winds are as bad for the land as they are for the live stock. If the old rule about the equinox holds good, we are to have a cold, dry spring, for the wind was in the north-east at that period. At present everything points to a late harvest.

Lambing will soon be over. We have heard of only one instance of ill fortune this season, and that was attributed to the ewes having had too many Turnips. There must have been great want of discretion. There has generally been an exceedingly small loss of ewes, lambs have been fairly plentiful, and though not big and strong they are healthy and doing well.

Keeping is very scarce, for there is little grass, and haystacks are dwindling rapidly. A town milkman tells us that he has never had so much milk, and his cows have never had a root. He has been using cut straw and hay with a plentiful supply of fresh grains and bran mash. He usually used 50 or 60 tons of Swedes; this winter he has used none, and has sold seven cows fat at £20 each. This shows what necessity can do. The land for the Thousand-headed Kale should be nearly ready, as the seed ought to be sown in mid-April. Manure and till as for Swedes, and drill 18 inches apart; 3 lbs. per acre, or a little less if it can be got on regularly, will do. The seed is scarce and dear, new seed being 2s. per lb., and new is always the cheaper in the end.

Draught mares are beginning to foal. Early foals may be desirable for people who exhibit, but April is quite early enough for a farmer to have the troubles of foaling and foals. Considering the great risk which mares incur in foaling it is wise policy to have both mare and foal insured. Even then there is great anxiety until mother and foal are safely out at grass. As foaling time draws near it is most necessary that the mare should not be left. Delivery often occurs very rapidly, and in five minutes the foal may be born and smothered for lack of a helping hand to free the nostrils. For this reason a man awake and on the alert should be within hearing distance of every movement. Assistance should also be within easy reach, so that it may not be necessary to leave for more than a minute or two.

THE HORSE TRADE IN AMERICA.—The number of horses sold at Chicago stock-yards last year was 111,611 as against 118,754 in 1898, which was the highest year's record since the commencement of the tabulated returns in 1865, when the total number received in the stock-yards was but 1563, a striking contrast to the numbers given for the past and previous years. A report from the large centre under the date of January 31st says that owing to the South African War having requisitioned so many ships for transport purposes that the Chicago dealers have been unable to secure sufficient accommodation for the horses purchased, and it is anticipated that until the release of the transports this difficulty will continue to exist, and must to some considerable extent affect the trade, whilst the high rates of freights will also become a factor in connection with this section of the trade. Looking at the prospects of the horse breeding industry in a general way throughout both the States and Canada, there are strong indications of a revival of the demand for imported stallions, more particularly of the heavy draught type, for it is becoming more and more evident that for this class of horses the demand is better and the prices higher than those realised for 'bus, cab, or light van horses. The Percheron is very popular in some districts, and there is a very good demand for this class of horse. At a recent sale of a stud of this breed thirty-six head averaged just under £80 all round.—("Farmer and Stock-breeder.")

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Journal of Horticulture.

THURSDAY, APRIL 5, 1900.

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The Garden Campaign.



MAy not life be regarded as a series of combats, and the various incidents in it as items in a campaign? These may be so small as to be practically unnoticeable, except by those whom they intimately concern; or they may be of such a character, in magnitude and consequences, as to rivet the attention of the world.

A campaign of the latter nature does not need to be particularised. Though far away it is very near, and not long absent from the thoughts of most of us in our waking hours, while it must almost of necessity haunt not a few in their mid-night dreams. Though all the world admires the bravery of brave and fearless men, and we in this island home of ours glory in the prowess and success of our heroic fellow subjects, yet the world-commanding duty in which they are so devotedly engaged is one of war and waste—a process of purification we would fain hope, and, like prairie and forest fires, the precursor of smiling fields and a fruitful land.

Our share, as horticulturists, in life's duties and responsibilities is of a wholly different nature. We may be said to be engaged, and it is hoped worthily and effectually engaged, in the great commissariat department of the nation. As wide as the poles asunder are our objects and methods from those above indicated. But still there is, what may be termed, mild similarity. The carrying out of a military campaign involves destruction, devastation, death, mourning, and great tribulation. These have always been incidents, paradoxical as it may appear, in human progress.

As just suggested, analogy may be found in the vegetable kingdom of the wonderful world in which we live. We prune the subjects in our particular domain to make them fruitful, not always wisely, it may be conceded, but that is the object. We cut out the cankered arms and limbs without hesitation when the necessity is assumed to arise, but we dress the wounds as if in mercy and for a healing purpose. We do not even scruple to behead

old friends, though they have been serviceable in their day and generation, but we do so to invigorate, or renew by the surgical art of grafting.

We uproot and utterly destroy ancient colonies, and consume them with fire, in order that new life and vigour may arise from their ashes, and wholesome food-producing successors flourish. We combat the enemies of these ruthlessly, and drench, poison, smoke, or stifle them without compunction. We are, in fact, ever engaged in combat; yet ours is not a war of waste—the sacrifice of human life and all that may conduce to its happiness—but a campaign of peace and productiveness. There is the great fundamental difference. Do all who are engaged in our peaceful, beautiful life-cheering and health-giving art, always act prudently and—yes, the word must come—mercifully? We shall, perhaps, see its applicability before the season's activities, now commenced, are over.

What is the necessary personal equipment of those who shall take a creditable part in our campaign? It can only be regarded as in any sense complete by the combination of a variety of acquirements. In addition to a good general education and technical knowledge, professional gardeners need to possess active powers of observation, with keen reflective faculties for the clear appreciation of cause and effect. They must cultivate the habit of watchfulness and the invaluable attribute of foresight; then, when imbued with a spirit of devotion to duty and promptitude in action, as occasion demands, they will not often be taken by surprise by the various "happenings" that are incidental to their vocation, and which, when not provided for, often have such prejudicial effects.

Take the case of supply and demand; no matter in what department, the fully equipped intellect of man will formulate a plan of operations by which the object in view will be achieved, because he will anticipate obstacles and provide for them, so as to minimise, if not nullify, their effects. He will neither rush into action precipitately with one thing, nor lag behind with another, thus incurring failure with both, but take careful stock of the means at disposal, and of prospective contingencies, will shape his course on the only safe lines that can be relied on to attain the end desired. A man thus equipped obtains what is required in the best form producible under the circumstances, and at the time it is needed; and why? Because he is a good general.

The trained, thoughtful, watchful gardener, be he amateur or professional, is quick to perceive what may be termed the tendency of symptoms. When this tendency, though apparently small in itself, is seen to be in the direction of a prejudicial issue, he at once resorts to measures for checking developments that might otherwise culminate in misfortune. The prompt righting of small wrongs prevents great evils. If this principle were acted on in the management of fruit trees in their youthful state, how much of after surgery, or rather fruitless butchery, would be prevented. The same principle holds good in all gardening affairs, and not least in that important duty of combating the natural enemies of those plants and crops we are seeking to produce. "Blunders in the field" is a phrase that runs glibly from the pens of armchair critics, who rest in security far beyond the zone of danger to themselves. There are blunders in the garden—real blunders—known to most men who have long been engaged in it, and not unknown to the present writer, for, truth to tell, he has been both a culprit and a victim. One of the greatest of these, and most common, as well as the most senseless, ruinous, merciless, costly, and even cruel, is the deep rooted, stupid, not to say lazy, habit of apparently watching the steady aggregation of insect scouts. Few at first, they are not thought worth troubling about. In far too many instances they are regarded with impunity till they become a formidable army of many legions before any serious attempt is made in subjugation. Destructive work has then been done by the horde of invaders, which are themselves then most difficult to destroy. Think of it all, and then surely condemnation must follow such miserable tactics.

Think of the filthy stunted plants—of the crippled growths of fruit trees, Vines, and Roses injured beyond restoration. Look at them and shudder. Grieve over them and pity their sad state. Then see those "ropes of bug," those "swarms of spider," those "colonies of thrips," those "piles on piles of lice"—aphides. If you travel far or into many gardens you will not have long to wait and be disgusted. Think again of the anxiety, the disappointment, the loss incurred, and of the frantic efforts made at last to conquer and to cure, but made alas! too late.

Once more, think of the waste of time and materials—money—in

the great slaughter, of the life encouraged to be (who) can say painlessly) changed, through writhing and horrible contortions, into death. It is positively cruel, and the more so because needless, but not cruelly intended, for truth lurks in the old couplet—

"Evil is wrought by lack of thought,
More than by want of heart."

That such evils in all their enormity as above described are preventable by early rational action is known to very many readers of these lines besides—AN OLD CAMPAIGNER.

An Australian Arcadia.

ONE of the most beautiful portions of New South Wales, if not of Australia, is that watered by the Clarence, so called after the duke of that name, in the northern part of the colony. "The Lovely Clarence," as the settlers along the banks of the magnificent stream are proud to call it, is the noblest stream of a noble family. It is the highway of traffic for an immense tract of remarkably productive country, and the principal avenue of commerce in the most important sugar-growing district in the colony. Communication with Sydney is chiefly by coastal steamer, a tri-weekly service between Sydney and Grafton, and the towns which dot the river bank, being maintained all the year round.

From the heads, forming the entrance to the Clarence, to Grafton is a pleasant run of about forty miles through scenery of the most entertaining character. The broad expanse of the Clarence, here running out into an arm eight or nine miles wide, and a little further on narrowing down to a mile, fully justifies the pride the farmers take in their magnificent stream. The rich alluvial flats, with their waving fields of Sugar Cane running down to the water's edge, the homes of the farmers all along the banks, the sugar mills with their huge chimney stacks, the islands, clothed in the most luxuriant semi-tropical foliage, which dot the stream all along its course, forms one of the prettiest and most satisfying pictures that could be imagined, the scene being completed by the graceful undulating hills, with their virgin forests, which skirt the fruitful plains on the river banks. Here the cruel hand of the drought fiend never retards the work of the producer; and the rising of the flood waters over the smiling crops of Sugar Cane does little harm beyond causing some inconvenience to those who have to seek higher ground for the time being, while the inundation brings down a fresh supply of Nature's fertiliser from the hills, and restores to the land what has been taken from it by a series of bountiful harvests. The rainfall is plentiful, averaging about 100 inches in the course of a twelvemonth, while, save for about four months in the year—two at the height of summer and two at the depth of winter—the climate is spring-like, and vegetation of all kinds thrives the year round.

The farmers' homes are the embodiment of comfort. One never sees the bark humpy on the Clarence, and there are no tumble-down cowsheds or dilapidated barns. The houses themselves are rather pretentious and ambitious. Mostly of weatherboard, with iron roof, the farmer takes a pride in his house, just as he does in the river, which he considers his own; the plot of garden is well kept and paled off, the house is painted, for the double purpose of preserving it and adding to its air of comfort; and if there are any barns or cowsheds which may in course of time become eyesores, by reason of their state of disrepair, they are judiciously out of the range of vision from the front verandah.

Grafton is a city that one would expect to find in a picture book, and one that is seldom come across in real life. It lies right down on the northern bank of the river, and spreads across the river under the name of South Grafton. Its streets are all avenues, mostly two chains wide, with a grove of trees on either side, leaving a clear drive of about a chain in the middle of the street, and of 12 feet to 14 feet between each kerb and the trees. There is an air of prosperity in every business house in the town. Empty shops are the exception, while some imposing establishments grace the main thoroughfare.

For years the cultivation of Sugar and Maize formed the staple industries, but the richness of the natural grasses and other favourable circumstances led to the introduction of dairy farming, which has proved an immense success, some of the finest butter and other dairy produce in Australia being furnished by the Clarence River district. Numerous agricultural crops are raised, and in the back country large numbers of cattle and sheep are depastured. Tropical and semi-tropical vegetation luxuriates in the fertile river flats. Oranges, Lemons, Bananas, Pine Apples, and Passion fruit all grow in abundance, but no attempt has been made to turn these fruits to commercial ends on a large scale. The whole yield of the orchards is consumed locally. Sorghum, Imphee, and Lucerne are cultivated, and yield abundantly, and, in fact, the climate and soil are congenial for the production of almost anything. Yet, strangely enough, the Clarence River district, the Australian Arcadia, is the one least known, not only to visitors to the Antipodes, but also to the great majority of colonists themselves.—J. PLUMMER, Sydney, N.S.W.



Two New Dendrobiums.

For several weeks the meetings of the Royal Horticultural Society at the Drill Hall have brought forth collections of Dendrobiums, some of which have been especially interesting for their rarity, and others for excellence of culture. On Tuesday, March 27th, the plants were much less numerous, quality taking the place of quantity. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, exhibited *Dendrobium Melpomene* (fig. 76). It is the result of a cross between *D. signatum* and *D. splendidissimum grandiflorum*. The prevailing colour is cream, deepening to canary yellow in the lip; the throat is deep crimson. It is an attractively beautiful flower, and was recommended for a first-class certificate by the Orchid Committee. A similar honour was given to *Dendrobium nobile album* (fig. 77), which was shown by Mr. J. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford. This is an exquisitely beautiful pure white variety, the form of which is shown in the illustration.

Albino Forms of *Dendrobium Wardianum*.

Those who imagine they have the true albino form of *D. Wardianum* should note that in it the lip as well as the other segments lose all traces of the crimson purple tint, and though it may not be more beautiful than the type it is certainly more rare. Those forms without the purple tips to the sepals and petals, but with a normal lip, are equally pretty, but according to my experience they are apt to revert to the normal type in a mild and rather washy form. At any rate it is well to let the plant flower twice at least before setting it down as a true albino.

Dendrobium Johnsoniæ.

There are few more beautiful Dendrobiums than this, and everyone who flowers it is charmed with the chaste and delicate blossoms. It has that graceful outline, too, that is wanting in those otherwise fine kinds, *D. formosum* and *D. infundibulum*. "I wish I had a houseful of it," writes a correspondent, who grows Orchids rather largely in the Midlands; and there are many others of a similar opinion who are increasing their stock of it. Like many others in the section to which it belongs, it is not everywhere a success; but where its wants are properly catered for, few who grow Dendrobiums at all will go far wrong with it.

The plant is only of moderate habit, so it is useless to expect it to thrive in large receptacles, such as suit the grosser-growing kinds,



FIG. 76.—*DENDROBIUM MELPOMENE*.

and as much of its growth is made during the dull season it is advisable to keep it well up to the light. The small pans for suspending are excellent for it. Sun heat and ample moisture are the conditions the Australian Dendrobes delight in, and this fine Orchid as much as any. The nomenclature is a little confused with regard to this plant, *D. Macfarlanei* being a synonym. It is a native of Torres Straits, and was discovered by Mr. Hartman.

Odontoglossum Ruckerianum.

The soft and delicate colouring on the segments of this charming Orchid will appeal to all lovers of this genus. In habit and all other characteristics it is very similar to *O. crispum*, and, like it, it delights in a cool moist temperature all the year round with ample light during our dull sunless winter, and close shading to keep down the heat of summer. Many forms distinct from the true *O. Ruckerianum* are labelled as such; indeed, it is not so common as many growers imagine. The sepals are prettily margined with rose purple, and the lip has a large blotch in front. There are several excellent varieties of *O. Ruckerianum*, and amongst them *O. R. splendens* (fig. 78, page 283) occupies a leading position.

Odontoglossum Rossi rubescens.

There is no more useful *Odontoglossum* than *O. Rossi*, and this variety in its best form is one of the best of the rather large number included in it. The true *rubescens*, although only a colour variety, has broader outer segments and a more massive lip than the type, with reddish brown spots on a rosy ground. Like all the other

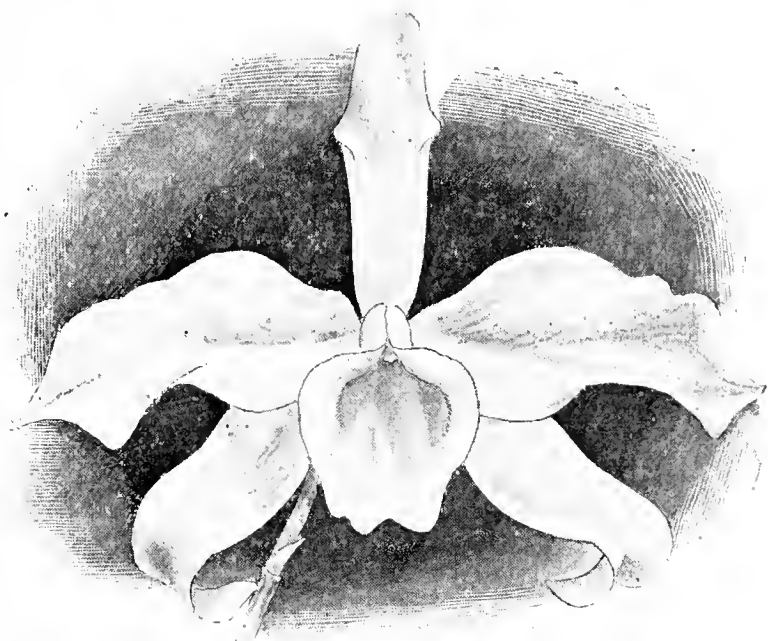


FIG. 77.—*DENDROBIUM NOBILE ALBUM*.

varieties it is very free flowering, and of the easiest culture in a cool, moist house, such as suits *Odontoglossums* generally. It should be grown in equal parts of peat and moss, and preferably suspended near the roof.

Angræcum citratum.

Many of the *Angræcums* belonging to the small flowered section are very beautiful plants, and I question if there is a better than this if all its good points are taken into consideration. The flowers are produced on pendulous racemes, and though the specific name refers to its colour this is usually absent in cultivated plants, most of them being pure white, though it is said to be citron yellow in a state of Nature.

Though this plant was discovered by that intrepid Frenchman Albert du Petit Thouars more than a century ago, it was not introduced to this country until many years after, the first recorded instance of its flowering being half a century later at least. It is a native of Madagascar, and should be grown in a strong moist heat, being preferably hung up not far from the roof glass. The small wood baskets are best for it, and failing these small pans. Ample supplies of moisture are necessary, but the compost should be so arranged that it passes easily and rapidly away. Light syringings in bright weather are helpful, but must not be overdone. Keep the roots on the dry side a little during winter and until the flower spikes appear.—H. R. R.

Oncidium Phalænopsis.

I READ with much interest the Orchid notes in the *Journal of Horticulture*, and as I cannot remember having seen during the past year or two any reference to this plant, I am sending a short note, as I consider it extremely useful as well as beautiful. *Oncidium Phalænopsis* is not a plant of robust growth, but it succeeds admirably in a cool house, which, in my opinion, is one of its greatest recommendations, as it can be accommodated with the *Odontoglossums*, and any really good addition to the cool Orchid house is always welcome. The individual flowers are not very large, but as several are borne on a spike this should be no disadvantage. The ground colour is pure white, and the whole of the markings, in the form of dots, spots, and bars, are of a peculiarly bright bluish-purple or violet tint. It is an Orchid that deserves extended attention from those who admire chastely beautiful flowers.—S.

Hardy Flower Notes.

HEEDLESS, perhaps, of past experience, a little while ago we might have fancied that winter had gone for the garden year, and that we were fairly over the threshold of spring. Our hopes were vain, for frost and snow have again returned to mock our dreams and to retard our flowers. As this is written, when March has almost gone, the snow yet lies on the hills which bound the horizon, and nightly frosts are severe, bringing with them the strain on plant life which comes from the sharp contrasts between the bright sunny days and the keen air of the night. It is now that one trembles for the safety of some flowers, and longs for the smiles and tears of April. These will come in due time, and ere this is in type, and meanwhile we must be content with the beauty of the present time. After all, one has little reason to complain, for letters from some not so far away tell of tardy flowers, hindered from coming at their usual time by the obduracy of the winter's movements. When one hears, as to-day, of a garden in which *Crocus Imperati* has just opened, and where only one Daffodil has bloomed, one feels that, after all, one's lines are cast in pleasant places. If we look round we shall see no meagreness of bloom to make us grieve.

Though the number of Daffodils in flower is not large as yet, the beauty of those in bloom gives us some delightful moments as we look at them and strive to absorb into our minds their graces of form and colour. It is the Trumpet Daffodil which now calls forth our admiration because of its marvellous attractiveness. If we study it closely we are the better able to enjoy its graces of silver and gold. The tiny little *Narcissus minimus* has lasted long. Though the first blooms show signs of wear and tear, those which have succeeded them are yet fresh and fair. The little minor and lobularis have come as well, and droop from the stems with all their wonted beauty. In its appointed place in the rock garden we have besides the rich golden yellow of cyclamineus major, whose long trumpet looks so quaint because of having its perianth segments turned back like those of the Cyclamen or the Dodecatheon, instead of standing like a frill around its base, or half-enveloping it in hood-like form, as some do. The first blooms of *N. pallidus præcox* grow a little paler as age begins to tell upon them, but later varieties of the same species are only now open or are on their way to join in the pleasing contest for the palm of beauty among the rival Daffodils. The Saragossa Daffodil is again among the earliest, and gives one full pleasure by its opened blooms of pale yellow gradually deepening to the extremity of the trumpets. The first deeper yellow bloom of that fine *Narcissus*, Mrs. H. J. Elwes, is only open to-day, but the shades of yellow which show from other Trumpet Daffodils tell us that we shall not have long to wait for a full revelation of the charms of the flower of the spring. The glory of the present lies, however, with the *Crocus*, though one must say little about it now in view of what was said by the writer so short a time ago. The glorious golden-yellow *Crocus* yet makes a brave display, and it has a gallant band of Dutch *Crocus* to be its vanguard, or, better still, as more appropriate in point of time of bloom, its rearguard. Many of the *Crocus* species have lost their holiday attire, and in sober green prepare for their long rest beneath the ground.

There is much delight to be found among the other bulbous flowers. To the bulbs, we who love to have early flowers in the open air, owe a deep debt of gratitude. What should we do without them to make our gardens bright and cheerful? Their hardiness and their charms are both passports to our affections, and, as years go on, the increasing numbers show us even more of their beauties than the few bulbs with which the stock may have begun. Of what shall we tell first in the necessarily short survey of the hardy flowers of the time? The Snowdrop is not yet over, though fast hastening to its resting time. The Glory of the Snow is with us still in its several forms. *Chionodoxa Lucillæ* has as its companions now the deep blue *C. sardensis*; the fine *C. Alleni* (if this is distinct from *gigantea* or *grandiflora*, which I rather doubt); the deep coloured *C. Tmolusi*, whose flowers have a tinge of purple; with the various forms of white or rose, which selection and seedling raising have given us from different species. The little *C. nana* is the latest and does not yet show colour.

The affinity between the Scillas and the *Chionodoxas* is shown by the presence of some of their hybrids, the *Chionoscillas*, with flowers between the two, but in some ways even more useful for distant effect. The Scillas as represented by blue, white, flesh, and pink varieties of *Scilla bifolia* are of much interest too. *Scilla sibirica* also gives its offering at the shrine of spring in the shape of its pretty flowers, which spread their petals to the bright sun, though too modest to upturn its flowers to its ardent rays. On the rockery we have as well the pretty blooms of the *Puschkinias*, with their pale, almost white, clustered blooms lined with blue. The latest Snowflakes join in the floral offering. *Saxifraga apiculata*, once thought crippled for the year, has, after all, given us a good display of its pleasing

sulphur-yellow flowers, and near at hand the deeper yellow *Saxifraga sancta* is bright with the smaller blooms it gives upon their uplifted stems. A change of colour is given by the varieties of *Saxifraga oppositifolia*, with purple or white flowers. The freest flowerer on the dry soil of my garden is *S. rudolphina compacta*, a neat dwarf plant, as indeed are all the others of the same section.

The Winter Heath, *Erica carnea*, is yet a mass of bloom, and its attractions for the bees seem to try to their utmost the loyalty of their attentions to the *Crocus* and other early flowers. In *Androsace carnea* we have an enjoyable little early flower for the choice rockery. Its small bright flowers are exquisite in the eyes of those who love these fascinating blooms, which have their wants best attended to in the rock garden among others of similar size. It is not very difficult to grow on a rockery where it can receive full sun, and also a plentiful supply of water in dry weather.

Perched on a rockery is the delightful *Rhododendron præcox*, said to be a hybrid between *dahuricum* and *ciliatum*. Its peach-coloured blooms are always welcome as the precursors of the other dwarf *Rhododendrons*, as well as for the beauty they themselves display. Would that the frost would be less disposed to take the colour from the flowers, and would not cause us to screen them from its power by covering at night with a hand-light. Not far away the earlier flowers upon *Lonicera fragrantissima* look a little sad because they have not received similar protection. The Lenten Roses, too, have suffered somewhat, and many are useless for the year.

Our tale is thus spun of threads of pleasure and of disappointment. Truly the garden of all seasons is a picture of our lives and their pursuits. I have, perhaps, been too mindful of the disappointments, as another walk in the garden ere the closing line is penned shows flowers other than those of which I have ventured to speak. It is always thus—the pleasures of the garden are inexhaustible to those who can view them aright.—S. ARNOTT.

The Culture of Primulas.

AMONG plants that produce abundant bloom during the early part of the year Primulas must take an important place. They are cheerful and attractive in colour, producing not only imposing heads of bloom, but large individual flowers, especially the single varieties of *P. sinensis*. The plants of both single and double sorts are readily raised from seeds. The latter, however, are not so perfectly double as the florists' varieties, these being named sorts and annually increased by cuttings. In addition to the single and double forms of *P. sinensis* there are the Star Primulas, or *P. stellata*, and *P. obconica*, the latter having lilac coloured blooms, the former blooms of various colours.

As regards raising these varieties from seed, the method and treatment are the same, as is also the subsequent culture throughout the summer and autumn. April and May are the best months for sowing Primula seeds, and if the strain is obtained from one of the leading firms who make their culture a special feature, and give unremitting attention to the task of maintaining the strain at a high standard, the result will be satisfactory.

I find 5 or 6-inch pots quite as suitable as pans or boxes for seed sowing. The pots must be clean and well drained. Fill them a quarter full of drainage, employing crocks of various sizes, the larger at the base, the smaller at the top. On them spread a layer of damp moss, then fill up with soil. This must be carefully prepared. Pull some fibrous loam quite small, and add an equal quantity of sweet leaf soil passed through a riddle to free it of small stones and sticks. Then intermix a liberal quantity of silver sand and crushed charcoal, thoroughly incorporating the whole. It must be in a moist condition, though not wet. Fill the pots to the rim and jar the soil down to a level mass, half an inch below the rim. Water the soil with tepid water applied through a roset can, allow the pots to drain well, and then sow the seed evenly on the surface. Just cover with a thin layer of sand. Place the pots in a temperature of 65°, and plunge if possible over some bottom heat.

A propagating frame is, of course, the best, sinking the pots to the rim in cocoa-nut fibre refuse; but failing this, introduce similar material into a large pot and sink the seed pot in this, standing the larger pot on hot-water pipes for obtaining the requisite heat. Cover with a pane of glass, and over that a sheet of paper, removing the latter when the seed germinates. Plunging the pot in a moist medium, and preventing rapid evaporation by protecting the surface soil from the drying influences of abundant air, are the best means of maintaining the requisite moisture in the soil without having recourse to watering before the seed germinates. When germination does ensue afford plenty of light to prevent the seedlings becoming drawn,

placing the pots on a warm shelf, and admit air by tilting the glass. When the seedlings have gained strength dispense with the latter, but the pots may remain plunged in a larger one until the time arrives for pricking out. This can be done in pans or small pots. The latter seem to be the best for subsequently easily dividing. Use similar compost to that for sowing, and place not more than three seedlings round the edge of 3-inch pots. Sink the seedlings down to the base of the leaves, which will materially assist in strengthening them. In pans or boxes give a space of 2 inches asunder. To place them closer results in the leaves growing too closely and crowding the plants, preventing that sturdiness which more space insures. A little heat and moisture will give them a start, which, on being assured, permits of assigning the plants a light position on a cool airy shelf in the greenhouse.

The next process consists in placing the plants singly in 3-inch pots, which should be efficiently drained. Prepare the compost with rather less leaf soil, but add a little well pulverised manure to the materials recommended previously. In potting secure the full share of fibrous roots belonging to each plant, and place low down, so that the plant rests securely on the surface of the soil. Make the compost firm, but not hard. Frame culture may obtain now, standing the pots on a moist base and near the glass. Water carefully at first, increasing the

Reminiscences of An Old Florist.—No. 6.

ALTHOUGH the Rose was the main object of my visit to France with Mr. Standish, and although for many years I was in the habit of making an annual visit there, it was not the only flower which attracted me thither; I had been for many years an admirer of the *Gladiolus*, and it was on the occasion of one of my visits that a kind friend said to me, "As you are fond of the *Gladiolus* you ought to go and see M. Souchet at Fontainebleau."

M. Souchet at the time held the position of chief gardener at the château—a château inseparably connected with the beautiful and extravagant Diana of Poitiers, who had left her mark in well nigh every room in the building. Most of the French monarchs of later years have occasionally made it their residence, and in point of historical incidents there is perhaps none of the royal palaces of France more full of interest. The gardens were laid out in the formal style so beloved in France, and of which Versailles and St. Cloud form perhaps the most notable examples. I do not know exactly when Souchet took up the hybridising and culture of the *Gladiolus*, but I think it must be more than half a century ago; at that time there was little done with it in England, and in fact the whole culture in France was of a peculiar character, for although a very few other cultivators appeared for a while on the scene, they gradually retired, and anyone who wished to obtain any roots had to do so through other sources, especially that of Messrs. Vilmorin, and the roots are, I believe, all supplied from Fontainebleau.

This visit paved the way to a long and lasting friendship, which only ended with the death of my revered friend. He was one of the most genial and pleasant of men, and though suffering from a very sad complaint, his serenity and cheerfulness were always unruffled; and it used to be one of my great anticipations as summer came on that I should once more see him. What stories he used to tell about the difficulties he experienced in the cultivation of his favourite flower. His greatest trouble arose from the larva of the cockchafer, or *Ver blanc*. The perfect insect appears in May or early in June, when it deposits its eggs in the soil, and after the larvæ are hatched they burrow beneath the surface, where they continue in the pupa state for three years. During this time they work untold mischief on every kind of produce with which they can come in contact. Souchet used to employ an army of women and girls to collect the perfect insects before they had time to begin their work of depositing the eggs. He has told me that bushels upon bushels of these pests were collected and destroyed every year, their numbers being much increased by the nearness to the forest. I have seen at Versailles, at Truffaut's nurseries, whole quarters of *Wellingtonias* completely killed by these insects barking the young trees.

However, Roses were after all the chief object of my visit, and every year I was able to bring back some definite information concerning those that were likely to be brought forward. There are one or two noticeable incidents in connection with these visits. Intelligence had been brought to us that Lacharme, to whom we are indebted for some of our best Roses, had raised a yellow Hybrid Perpetual. Now, as this was one of the great desiderata of the Rose world, on mentioning it to a London nurseryman he authorised me to offer a good round sum for it. Alas! however, when I got to Lyons I found it was all a myth! It was true he had found in one of his seedlings a slight tinge of yellow at the base, but this vanished as the flower opened, and it was simply a white Rose. On leaving Lacharme's nursery I went to Guillot's (young Guillot, as we used to call him then, though he too has passed away, and the Guillot of the present day is his son). On going over his garden we came to one Rose tree, and he said, "I think this is the beginning of a new race, and I expect great things from it." It was indeed a great beauty, very sweet, and really one of those Roses which, like good wine, needs no bush. I was so struck by it that I ventured to offer him the sum which I had been authorised to offer for the yellow Rose, thinking it would have tempted any French nurseryman. Guillot, however, wished to have the honour of sending out this new Rose himself, and probably there has been no more popular Rose than *La France* (for it was that Rose), which he sent out as a Hybrid Perpetual, but which after some years was placed in the class for Hybrid Teas.

Another incident was my first introduction to Maréchal Niel. M. Eugène Verdier brought to me one morning at my hotel in Paris a box of Rose blooms. They were of various shades of red and crimson, but though pretty did not seem to me anything remarkable. Glancing at the box I remarked, "But what is that?" "Oh, that is a yellow Rose," he replied, "which came from the south." "Then," I said, "that is worth all the rest of the Roses you have brought put together." I advised him to keep it over for another year, bring over a box of blooms at one of our exhibitions or to the R.H.S., and added, "I venture to say you will reap a golden harvest." There were,



FIG. 78.—*ODONTOGLOSSUM RUCKERIANUM SPLENDENS*. (See page 281.)

supply as the plants become established. The frame should be stood, if possible, on the north side of a wall, which will obviate the necessity of shading from the sun, but if in other positions shade during the midday hours must be given. A free circulation of air is also of importance.

The final potting may take place from this size pot, 3-inch, employing 5 or 6-inch according to the strength of the plants. Loam, leaf soil, decayed manure and sand, with a proportion of crushed charcoal will form a suitable compost. See that the plants to be potted are thoroughly moist, as it will be a difficult matter to moisten the ball of roots afterwards without unduly saturating the new soil. Employ efficient drainage in the pots. Place the plants low down, and work the compost carefully round the ball, filling it up to within half an inch of rim of pot. It may be made firm, but not hard. Stand the plants back again in the frame on a moist base of ashes, and for a week or so keep the frame close. Afterwards give air in increasing quantity as the plants become established, drawing off the lights entirely on favourable occasions. If the sun reaches the frame at midday shade must be given.

In September the plants may receive full sun. At all times carefully water, keeping the heads as near the glass as possible. At the end of September remove to shelf in greenhouse, where they may remain until flowering commences. At that period weak supplies of liquid manure will be beneficial in strengthening the flower spikes and intensifying the colours of the blooms. During midwinter, however, liquid stimulants are not needed quite so often.—E. D. S.

however, some trade complications which prevented this. I was not wrong in the estimate I formed of *Maréchal Niel*, and although I think it must be mainly considered as a Rose for the house, yet it is perfectly hardy, and unquestionably one of the most popular Roses that we have.

I attended several Rose exhibitions in France, but have been utterly disappointed with them. One great mistake they make is to attempt to get together too large a number of flowers; prizes for 250 are frequently offered, and when these are brought to the exhibition they are so arranged as by no means to show forth their beauty. Again, let me say that one never sees at a French Rose show flowers that can at all compete with those that carry off the premier prizes at our national shows. I think that this is, in a great measure, due to the wish not to incur expense, and to the entire absence of amateurs, for amateurs, like some of our largest growers, are entirely wanting in France.

Another visit which is strongly marked in my memory is one that took place a good many years ago, how many may be gathered from the fact that it occurred when Mr. Bowles was manager at the Crystal Palace. There was to be an exhibition of bouquets, and he was anxious that it should be an international one. We heard a great deal of the artistic arrangements of hand bouquets which prevailed amongst the *bouquetières* of Paris, and he was anxious that the British public should have an opportunity of seeing what they could do. He therefore asked me if I would try and arrange it for him. I did so, and with a great deal of trouble carried it out. I went to Chévet in the Palais Royale, to another florist in the Boulevard des Italiens, and another in the Boulevard Poissonier. They were not limited as to price. I had a good deal of trouble to get them to my hotel in time, and starting by the night mail, we arrived at the Crystal Palace in time. The whole thing was unfortunately a disappointment, and forced upon us all the conclusion that our English florists were no way behind their French compeers; in fact a good many illusions of this kind have been dispelled by our better knowledge of France and its ways.

Many English people will have an opportunity this year of visiting the French capital; they will be able to learn much of French horticulture around Paris. Let them, however, avoid two errors: First of all not to think everything French must be good; and secondly, not to think that we have a superiority in everything. There can be nothing more offensive than the contemptuous manner with which many English tourists regard everything French. Of course my travelling days are now over, but I shall always look back upon my visits to France as times when I learned a great deal in horticulture and enjoyed myself much. I suppose that my French extraction had something to say to the pleasure I experienced, for whenever I told people about it the welcome I received was still more cordial.

But my visits abroad were not confined to France. I went several times to Belgium; I visited M. Linden at Brussels, and Verschaffelt, Van Geert, and others at Ghent. This is a wonderful city for horticulture, but I was never able to be there at any of their quinquennial shows, for, unfortunately they always began on Sunday. In many of these Azaleas, Camellias, and foliage plants were cultivated with great success, and it was wonderful how cheaply these plants were produced and how hundreds and thousands of them were turned out exactly like one another. We see the same now amongst our market gardeners in the neighbourhood of London; Fuchsias, "Geraniums," and other plants are turned out as if from a mould. There were, however, no such attractions for me in Belgium as were afforded by the Roses and *Gladiolus* in France, although in the case of the latter flower the large number of the beautiful varieties raised by Souchet and his successors owe their origin to Gandavensis, which, as I said, was (as its name implies) raised in Ghent.—D., Deal.

The Royal Horticultural Society.

Scientific Committee, March 27th.

Present: Dr. M. T. Masters (in the chair); Mr. E. F. Im Thurn, Mr. Michaels, Mr. Hudson, Dr. Russell, Mr. A. Sutton, and Rev. W. Wilks.

Fringed Cyclamen.—Dr. Masters exhibited from the collection of *Cyclamens* brought by the St. George's Nursery Co., Hanwell, to the Drill Hall, a leaf of their fringed *Cyclamen*, in which not only the flowers were fringed but the leaves were deeply lobed, and the lobes themselves were lobulate and bilobulate, the ultimate lobules being irregular in size, and, in some instances, shortly stalked, thus presenting an appearance similar to that of curled Parsley or of some of the varieties of *Scolopendriums*. It was stated by the raisers that the sub-

division of the leaves was observed originally on plants bearing flowers of the ordinary character, and subsequently on those which had fringed flowers. Continuous selection through some seven or eight years had, at length, resulted in the production of plants in which the foliage and the corolla were equally deeply fringed.

Rose leaves.—Some Rose leaves were sent for an opinion. They had been grown under glass, and presented no appearance of insect or fungus; but were thin in substance and partially destitute of chlorophyll, showing that the nutrition of the plants was impaired, but from what cause could not be ascertained.

Vine leaves, diseased.—With reference to the samples sent to the last meeting from Gunnersbury, it was stated that in the opinion of Mr. Massee the appearances were consistent with the attacks of red spider or punctures of aphides; but reference to Viala's *Maladies de la Vigne* and Mr. Massee's Text-Book of Plant Diseases showed that the spots were probably an early condition of Grape-rot (*Glaeosporium*). The leaf-buds were observed by Mr. Massee to be infested with mites.

Viburnum with hypertrophied branches.—A specimen was sent by Mr. Richard Dean, who stated that the whole tree was covered, at intervals of a few inches, with globose, nodulated, somewhat fleshy excrescences, the size of a large Cherry and upwards. It was referred to Dr. William G. Smith for examination.

Growing Cockscombs.

CELOSIA CRISTATA, the Cockscomb, is a very old favourite annual. In offering a few remarks on the culture of these plants, let it be understood that the production of really good specimens depends more on the care and enthusiasm of the cultivator than any instructions he may receive.

Sow the seeds at once in pots, pans, or shallow boxes; place at the bottom a layer of potsherds, and the rougher portion of the compost over the drainage, which should consist of equal parts of loam and leaf soil, with a little silver sand. The seeds should be sown as evenly as possible, but not too thickly, covering with about one-sixth of an inch depth of the same soil finely sifted, plunge them into a hotbed, and give a little tepid water; place a square of glass over the pans or pots, and it should not be removed until the young seedlings touch it, and at no time allow them to suffer by want of water. As soon as they are large enough to handle transfer them singly to small pots, employing well-enriched soil—namely, light turfy loam, leaf soil, and well-decayed manure in equal parts, with sufficient sand to make the whole porous—and plunge them in a hotbed close to the glass, and shade from bright sunshine for a few days, at all times choosing a gentle warm day for potting, taking care that they do not receive a check from cold.

The plants will grow freely, and before becoming root-bound transfer them to 5-inch pots, employing the same compost as before, but adding a few finely broken oyster shells. Return them again to the hotbed and plunge them near to the glass for a time. Shade during the hottest part of the day, and close the frame or structure early in the afternoon. Be careful never to allow the soil to become too dry, or failure will result. It is the chief cause of stunted plants and loss of foliage, and nothing shows defective cultivation so much as plants with long stems devoid of foliage.

Cockscombs must be encouraged to grow uninterruptedly. Immediately the 5-inch pots are filled with roots, shift the plants into pots 9 or 10 inches in diameter. Be very careful about the drainage, especially those for late blooming, as in the dull days of autumn they are apt to decay at the neck if not well drained. Place a thin layer of moss over the drainage, with a sprinkling of soot to prevent worms entering the pots. Again assign them to the hotbed; plunge them near the glass, shading in sunny weather for an hour or two during the heat of the day, for if exposed to a scorching sun immediately after potting, the plants will lose their lower leaves.

When the flower-heads are showing, liquid manure may be supplied. About a handful of guano to a can of 4 gallons of water is an excellent stimulant; but it is not advisable to supply it too freely, as the premature decay which is attributed to damp is more often the result of overfeeding with liquid manure. When fully grown the plants may be gradually hardened and placed in a light well-ventilated structure, as a dry atmosphere is necessary; syringe occasionally to prevent the attacks of red spider. At this stage of their culture the greatest care must be taken to guard against excessive watering. If that is kept in view they will continue to be attractive for two or three months, and there are few brighter plants than well-grown Cockscombs. I have seen superb specimens, measuring from 2 to 3 feet from tip to tip of the comb, and as dwarf and compact as could be desired.—M. W.

NOTES & NOTICES

Recent Weather in London.—Intensely cold winds with brilliant sunshine at rare intervals and occasional night frosts have characterised the weather in the metropolis of late. Tuesday morning brought a decided change to milder conditions. There was little wind, and a gentle rain fell for some time, increasing to quite a downpour in the evening. At the time of going to press on Wednesday it was mild and dull.

Weather in the North.—Throughout the whole of the week ending the 2nd inst. frosts of from 4° to 6° have occurred nightly, and the days have been bright with an occasional duller evening. Farm work is being pushed on under favourable conditions, but vegetation makes little progress.—B. D., *S. Perthshire*.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, April 10th, 1 to 5 P.M., in the Drill Hall, James Street, Westminster, when special prizes will be offered for Daffodils (see R.H.S. Book of Arrangements, p. 58). At three o'clock a lecture on "Some of the Plants Exhibited," will be given by the Rev. Prof. G. Henslow, M.A.

Newcastle Flower Show.—On July 25th, 26th, and 27th Leazes Park, Newcastle-on-Tyne, will be the venue for the flower show of the Durham, Northumberland, and Newcastle-upon-Tyne Incorporated Botanical and Horticultural Society. The secretary is Mr. I. B. Reid, Mosley Chambers, Mosley Street, Newcastle, who will send schedules and particulars to applicants. There are five and a half dozen classes, divided amongst various sections of growers and for different kinds of produce, and the prizes should prove sufficiently tempting to bring forward a large number of exhibitors of a very high average quality.

The Royal Horticultural Society of Southampton.—It is pleasant to learn that this important society, which has of late years had many difficulties to contend with, is now practically free, and will thus be better able to continue its work. The report for 1899 shows a most satisfactory advance. The dates of the summer show have been fixed for June 27th and 28th, on the Royal Pier, and the schedule comprises classes for Roses as well as general seasonable produce. There are about four dozen classes. The Chrysanthemum and fruit show will be held in the Skating Rink on November 6th and 7th, when a fine show may be looked for. There are five dozen classes, many with capital prizes, and it should not prove difficult for all sections of growers to find classes suited to their conveniences. The honorary secretary is Mr. C. S. Fudge, 17, New Alma Road, Southampton.

The Gardeners' Association of Ireland.—The members of the above society held their usual monthly meeting in D'Olier Street, Dublin, on Thursday, March 29th, when there was a large attendance of members, and the president, Mr. Collier, occupied the chair. After the usual routine was completed, Mr. McFadzean, The Gardens, Killakee, (Lord Massey's) contributed a paper on "Cottage Gardening." He desired to impress on architects and others, when designing their houses, to leave a much larger space than heretofore, in order that the cottagers may be able to live more comfortably; also, as an incentive to better work, their landlords should start a cottage show (a feature not common enough in this country), contributing prizes. The remaining portions of his essay dealt with the uses of fertilisers, cultural notes, and the crops most suitable for the cottager. Subsequently Mr. R. Weller, F.R.H.S., Crostanstown Farm, Newbridge, read a short paper on "Grafting." He started by explaining the various modes of grafting in general, and laid special stress on the styles time had sanctioned. He ventured the opinion that side grafts were the best for pot Roses; that when grafting fruit trees the factor of locality should be kept prominently in view, otherwise failure may be the result. The latter portion of his paper comprised a series of hints for the guidance of those who intend to master the art of grafting, so that their labours may not be futile. The two papers gave rise to a spirited discussion. After a vote of thanks was unanimously passed to the lecturers, the meeting was brought to a conclusion. Mr. Hall, secretary, was in attendance.

Light.—In resuming his lectures on Saturday at the Royal Institution on "Polarised Light," Lord Rayleigh specially dwelt on refraction with all its remarkable phenomenon of varied colour. As the physiologist deals with the minute details of nerve and tissue, or the chemist in resolving the most complex body into its constituent elements, so has this expositor on optical physics gone into the most subtle properties of crystalline colour, analysing everything in connection with it, demonstrating its strictly scientific aspect by a series of most exact and pertinent experiments. Special reference was made to the theories and discoveries of Sir George Stokes and Mr. Madden. After hearing these lectures from the Royal Institution professor of natural philosophy the student can only come to the conclusion that, while the laws of Nature abound with evidence of the most supreme wisdom of their Author, the scientist in revealing these marvellous facts is indeed an apostle of veritable truth.

New York Nursery Inspectors.—Certificates of inspection of nursery stock have been issued by the Department of Agriculture at Albany to nearly 500 nurseries in New York State during 1899. These certificates are good up to and including June 30th, 1900. The inspectors found, says an American contemporary, that the San Jose scale has not increased appreciably in 1899, and are under the impression that it is on the decrease. There have been about 43,000 nursery stock destroyed this year, about 70 per cent. of this number being confined to one locality. The western part of the State is comparatively free, there being only three or four instances where it existed to any extent, and the stock was entirely destroyed. There are in the State five inspectors, men who are taken from the civil service eligible list, after having passed an examination for the position of nursery inspector. There is now before the legislature a bill amending the law, so as to have fumigating applied to all stock raised within the State as well as to all stock brought from without the State.

Hull and East Riding Chrysanthemum Society.—It is regrettable to learn from the committee's statement that there continues to be a falling off in the receipts of this excellent society, and we trust that the year 1900 will prove the turning point to a period of renewed prosperity and usefulness. Few societies have done more than this during the past fifteen years to popularise the Chrysanthemum, and it is deserving of generous support. This year's exhibition will be held in the Artillery Barracks, on November 14th and 15th, and a schedule of half a hundred classes has been arranged. These include, in addition to the celebrated group section, excellent prizes for incurved and Japanese cut blooms, £40 being offered in two classes for these. Silver cups and pieces of plate are added to the premier awards in several classes, and there is practically sure to be splendid competition. What the society really requires is a very much increased list of annual subscribers. Messrs. E. Harland and J. Dixon continue to officiate as hon. secretaries.

Chester Paxton Society.—The last meeting for the winter, session was held in the Grosvenor Museum on Saturday, when Mr. R. G. Waterman of Woolton, Liverpool, delivered a lecture on "Exhibition Roses." The lecturer is well known throughout Lancashire and Cheshire as a successful exhibitor of the "regal flower," and his remarks on this occasion were characterised by a thoroughly practical knowledge of his subject, which he freely imparted to his hearers. Minute details of the best varieties to grow, soil and situation, mulching, pruning, staging for the exhibition, table, as well as the treatment of pests which Roses are subject to were given. Incidentally he said that the gratitude of all those who appreciated really good Roses was due to the Pauls, Dicksons of Newtonards, Bennett, Piper, Cranston, Lord Penzance, and others who have done so much in the way of hybridising and raising new varieties. To the Very Rev. Dean Hole, Rev. H. D'Ombrian, Wm. Paul, and other writers on Roses, he said our thanks were no less due. In his closing remarks Mr. Waterman said that much as his success had been with the Hybrid Perpetual varieties, he nevertheless pleaded for an extended cultivation of the old fashioned garden Roses as well as the new simple varieties now popular with so many, and said he hoped that Rose societies would in the future recognise these more fully in their prize schedules. An interesting and profitable discussion followed, in which the chairman of the meeting (Mr. Thomas Weaver), the president of the society (Mr. Robert Wakefield), Mr. Hawkins, and Mr. J. Weaver took part. In proposing a vote of thanks to the lecturer, Mr. G. P. Miln emphasised what had been said about the old fashioned and simple varieties of Roses, and said that the presence of these was an added adornment to any garden. This vote of thanks was carried with acclamation, and a similar compliment to the chairman brought the meeting to a close.

Gardening Appointment.—Mr. Chas. Ford, for two years foreman at Coombe House Gardens, has been appointed head gardener to Henry Goschen, Esq., Heathfield, Addington.

Philadelphia's First Willows.—It is stated that the first Willow trees in Philadelphia (which grew on the site of the custom house) resulted from an accidental discovery on the part of Benjamin Franklin, who found a wicker basket, which had been thrown into a damp place, sprouting. He felt much interested, and gave some of the cuttings to Charles Morris, who planted them on his place. The stalks took root readily and thrived, and a number of Willow trees resulted.

Royal Bouquets.—In a description of the Royal saloon decorated with Shamrock on the occasion of her Majesty's memorable visit to Ireland, we are told that charming bouquets of flowers from the Frogmore gardens were provided for the Queen and Princesses. Her Majesty's consisted of Tea Roses, Lilies of the Valley, and Maidenhair Ferns. Princess Christian's was made of Orchids and other blooms, and Princess Beatrice's of Ghent Azaleas, Lilies of the Valley, and foliage. All were bunched in lace-paper holders. A vase of Violets was also placed in the Royal saloon.

The Profits of Market Gardening.—Numbers of inquiries come to the editors of horticultural and agricultural newspapers of gardening profits that may be made out of growing fruits and vegetables for market. Much attention is paid to the character of the soil, the climate, and the adaptability of varieties to these conditions; but one essential is over all, and that is the marketing of fruits and vegetables after they have been raised. Even when there are markets convenient a person may be wholly ignorant of the methods of marketing. It takes, says Mr. Meehan, nearly as much art to know how to sell as it does to know how to raise the article in the first place. In brief, the success of any proposed market garden plan depends as much on the man himself as on the natural conditions of soil and climate.

Workmen's Compensation Act and Agricultural Labourers.—On Tuesday the House of Commons Grand Committee on Trade revised the Workmen's Compensation Act, 1897, Extension Bill, Mr. J. Ellis in the chair. Mr. Walter Long moved that Clause 1 should read as follows:—"The Workmen's Compensation Act, 1897, shall apply to the employment of workmen in agriculture by the occupier of any farm or premises used wholly or in part for the business of agriculture, who habitually employs for hire one or more workmen, and any such occupier shall be deemed an undertaker within the meaning of that Act. The expression 'agriculture' includes horticulture, forestry, and the use of land for any purpose of husbandry, inclusive of the keeping or breeding of live stock, poultry, or bees, and the growth of fruit and vegetables, and the like. The expression 'workman,' in the case of agriculture, means every labourer in agriculture." At present the clause said that the original Act "shall apply to all employment on or in or about agricultural work, and a labourer in such employment shall be deemed to be a workman within the meaning of the Act." These words would, of course, disappear if his amendment were adopted.

The Red Book of Honour.—In this small manual with a significant crimson binding, and bearing the title "Who's Who at the War," we have chronicled by Messrs. Charles and Adam Black the names of only a part, alas! of those who have died and suffered for us in South Africa. The record includes commissioned officers killed and wounded to about February 20th last, but takes no account of the others of lower rank, or of those since included in the casualty lists. There is a talk of erecting in London some more imperishable record than that upon paper to the memories of our latest gallant slain. If so, it should be a temple in honour of the Empire, or better, the British Commonwealth now visible, and having on its walls the names of all who died in cementing that glorious political structure. No doubt the counties and colonies will do their best to immortalise the exploits of their own regiments, but in the metropolis should rise a Pantheon where in pictures, tablets, and scrolls should be perpetuated the names and deeds of those who have died in order that their motherland might be great. Westminster Abbey and St. Paul's are antiquated and insufficient. The Victorian Era should be commemorated by a British Valhalla standing on the new Embankment by St. Thomas' Hospital, and facing the Houses of Parliament.

Tree Planting on Welsh Crown Lands.—We are informed that her Majesty's Commissioners for Woods and Forests have again placed their order for extending their plantation on Crown property, Wales, in the hands of Messrs. Wm. Clibran & Son, under the superintendence of Mr. Lewis of Arthog.

Hampstead Heath.—This popular resort of Londoners has had another charm added to it on the Golder's Hill estate. This beautiful area exceeds 30 acres in extent, and was secured to the public for some £36,000. The estate is now vested in the London County Council, and becomes the property of the metropolis in perpetuity.

Engines Injuring Flowers.—A firm of nursery gardeners and florists, Messrs. Cull & Rook, carrying on business near Tottenham, on 27th ult. successfully brought an action against the Great Eastern Railway Company, to recover damages for injury to their business caused by passing trains. The case was tried by Mr. Justice Grantham and a special jury. In 1898 the railway company constructed a large number of sidings near Tottenham, and on these, the plaintiffs alleged, engines were constantly waiting, and the drivers took the opportunity to clean their boiler tubes, a process known as blasting. Black and greasy smoke, steam and soot, Messrs. Cull declared, pervaded their greenhouses, quite blocking the light. With the smoke was emitted quantities of sulphur, which mingled with the atmosphere to make a kind of sulphurous acid. This got into the greenhouses and damaged the plants. Defendants submitted that they had acted solely within their statutory rights, but the jury found for the plaintiffs, damages £400. A stay of execution was granted by the judge, pending an appeal.

Weather in Ireland.—The weather in the metropolis and adjoining counties is far from being pleasant. Since the slight return of the snow about a fortnight ago a reaction has set in, the days being cold with several frosty mornings. The rain, however, was of the briefest, only slight drizzling showers, and a complete absence of sun—that is, practically speaking, until Saturday the 31st. This was a pleasant day.

Sussex Weather.—The total rainfall at Abbot's Leigh, Hayward's Heath, for the past month was 0.83 inch, being 1.14 inch below the average. The heaviest fall was 0.44 on the 18th. Rain fell on five days. The maximum temperature was 56° on the 10th, the minimum 19° on the 18th. Mean maximum, 45.16°; mean minimum, 32.19°. Mean temperature, 38.67°—2° below the average. A dry, cold, sunless month. Vegetation backward, showing signs of a late spring.—R. I.

March Weather at Dowlais.—Total fall rain and snow 1.44 inch, which fell on eight days. Greatest snowfall 0.42 inch on the 18th; most rain 0.25 inch on the 9th; for the same period last year 2.22 inches on ten days; total for the first quarter 17.32 inches. Temperature: mean maximum, 40.451°; highest reading 50° on the 29th; mean minimum 24.709°; lowest reading 10° on the 17th; below freezing point on twenty-six nights; mean in the sun, 50.387°; highest reading 86° on the 12th. Sunless days twelve. The wind was in the N.E. and E. for the greater part of the month. Bitter, cold, and piercing winds prevailed until the last week, when it was very mild in the daytime, but sharp at night.—WM. MABBOTT.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
March.										
Sunday.. 25	E. N. E.	deg. 38.5	deg. 33.2	deg. 41.9	deg. 34.7	ins. —	deg. 39.9	deg. 42.2	deg. 43.9	deg. 30.4
Monday.. 26	E. N. E.	35.2	33.6	41.9	31.7	—	39.9	42.1	43.9	22.6
Tuesday 27	N. N. W.	35.0	32.8	41.1	31.5	0.15	39.4	41.8	43.9	22.0
Wed'sday 28	S. W.	38.1	37.0	42.3	31.3	—	39.7	41.8	43.9	22.6
Thursday 29	N. N. E.	36.7	34.3	45.5	29.8	—	39.5	41.8	43.9	20.5
Friday .. 30	E. N. E.	33.2	31.9	47.3	25.8	—	39.2	41.8	43.7	18.2
Saturday 31	E. N. E.	36.1	33.8	47.9	28.5	—	38.7	41.5	43.7	19.6
MEANS ..		36.1	33.8	44.0	30.5	Total 0.15	39.5	41.9	43.8	22.3

The weather during the week has been cold, dull, and dry.



Fruit Prospects and the Weather.

IN the south of Ireland we have had during the past month very abnormal weather. I cannot remember another March in which the temperature was continuously so low—hardly a single day even with the sun shining above 50°, and generally below 40°. The result is that the season is about a month backward. I have had Ashleaves and Snowdrop Potatoes planted in friable soil for a month, and they are barely moving. It would have been worse than useless to sow small vegetable seeds. Of much importance is how this state of things will generally affect the fruit crop prospects, and, perhaps you would invite the opinion of English and Scotch correspondents on the point. Here we are certainly a month behindhand. There is not a fruit tree in flower in my garden at the end of March. I have often had even such late varieties of Pears as Beurré Diel and Josephine de Malines in full flower at the end of February. There is a fair prospect of bloom upon Marie Louise, Clapp's Favourite, Beurré Bachelier, Williams' Bon Chrétien, Jargonelle, Louise Bonne de Jersey, and Conference, but Beurré d'Amanlis and Doyenné du Comice are not sufficiently forward to form an opinion yet. The same thing applies to Apples. Needless to say there is not even an Irish Peach Apple yet in blossom or likely to be for a fortnight. The earliest garden blossoms are generally Apricots—fully a week must elapse before either an Apricot or Nectarine blossom expands in my garden, and then only those partially protected against a south wall. So of flowers, Crocus, Snowdrops, Anemones, and early Narcissi are gradually expanding equally late. Admitting the danger from late frosts is thus minimised, is not all this encouraging for fruit prospects?—W. J. MURPHY, *Clonmel*.

Sparrows and Yellow Crocuses.

I HAVE no wish to enter into the controversy as to what induces the sparrow to destroy the yellow Crocus blooms in so many gardens, although from his conduct in other respects I should, notwithstanding his many attractions, be inclined to lean to the side of those who say that they are pure mischief. I wish to note the circumstances of my own experience, of which I can give no explanation. For many years I suffered annually from their depredations; each year as the spring arrived I watched the development of the borders of bright flowers in my garden, and I hoped that I should be left unmolested; but, alas! it was not to be, and I vowed vengeance against the whole tribe, which all ended in smoke, for I have neither shot nor trapped one. However, some years ago when spring arrived and the blooms were very abundant, and I looked of course for the arrival of my friends, but none came. There is a farmyard next to my garden in which they hold their parliamentary discussions and arrange their plans, and strange to say, whether the conservatives outnumbered the radicals or whatever was the reason, my Crocuses were left severely alone. Since that time I have never suffered as I used formerly to do. I can only think that some conservative orator amongst them denounced their proceedings and obtained a vote in my favour, and not a single bloom suffers.—D., *Deal*.

It is so difficult for me to assume that birds, in pulling or eating flowers, do anything wantonly. One might as well assume that when birds eat Peas, or Cherries or Pears, or any other fruits they are acting wantonly, and not because they seek food. Certainly the little holes tits make close to the stems of Pears that are unprotected seem to be wantonly made, as often nothing more is eaten, but that food is the object there can be no doubt. The Pear looks tempting at the time the harm is done, but the fruit, after all, is not sufficiently luscious to gratify the bird's palate, hence it passes on to another one, and again the same thing happens. Were the harm done "wantonly," or from pure love of mischief, we should then have to put the birds on a reasoning equality with boys who love to indulge in wanton mischief, because they know that some one or other will experience annoyance.

Could the Croydon sparrows read and understand the recent note from "B. K.," how they would laugh and chatter over his vexation. But they are just as innocent of doing him or his Crocuses "wanton" harm as they are of understanding his feelings when he sees his plucked flowers, or perhaps in the late summer his pecked Pears and Apples. It is not evidence to say that not a particle of the flowers cast on the ground is eaten. Seeing that invariably the flowers are bitten off near the calyx, it seems far more likely that the object of the injury done is to obtain the nectar or honey which may lie in

the base of the flower, and be it remembered of the Saffron Crocus, also, which is sweetly perfumed. What birds search for in these flowers they apparently find also in Primroses and Polyanthuses, which in places sparrows destroy wholesale, especially in the neighbourhood of buildings, where probably other sweet food is very much lacking in April.—A. D.

Pelargoniums and Geraniums.

REPLYING to "W. G.'s" note in last issue, I well remember the seedlings referred to, but am under the impression that *G. pratense* and not sanguineum was the supposed male parent, Mr. Lowe's object being to introduce "blue blood" into the Zonals. The cross has been frequently attempted (by myself among others), but always in vain, and I believe there is no authentic record of any hybrid between Pelargonium and Geranium. Some of the seedlings certainly differed most wonderfully from the seed parent Madame Vaucher, but I could never myself detect any blue in them, and I believe that they were merely the result of self-fertilised flowers, and were reversions to an ancestral type, as we afterwards took one of the most remarkable, to Chiswick, and found it almost indistinguishable from *inquinans*, one of the original species from which our modern race started.—CHAS. E. PEARSON.

Judges and Judging.

It is very apparent from the number of letters which have appeared that this is a subject of wide interest. One can see, too, that divergent views are held on the subject, though the majority of your correspondents favour the retention of the same judges year after year. Nevertheless, I shall hold to the statement published on page 179, as I do not think any of your correspondents have advanced any very strong arguments against it. It will, perhaps, be as well if I refer to the several letters, and reply briefly to any points raised therein.

Mr. A. Kingston was first in the field, and needless to say he strongly objects to any changes in the direction indicated, and brings forward in support of his case arguments that are manifestly unreasonable. I most certainly should not advocate the employment of a Rose specialist to judge Chrysanthemums, and did not hint at such a thing. I am by no means convinced that the judging by the same men at Chrysanthemum shows is always followed by good results. Both Mr. A. Kingston (page 199) and "An Ex-Secretary" (page 217) propound the same question as to whether the continued re-election of judges does not prove that the executive committees are satisfied. To this I would unhesitatingly reply in the affirmative, but I do not by any means think that entire satisfaction to the exhibitors follows as a natural matter of course.

Then your secretarial correspondent suggests that I should not like to stand back for another. This would be quite true if I could get no other engagements, but this ringing of the changes simply provides fresh judges for every show if such be desired, and I maintain it to be desirable in the best interests of societies, exhibitors, and judges. "An Old Provincial" (page 245) writes a most excellent letter, and though his views are in opposition to my own, I was delighted with the logically reasonable phrasing. So far as I can gather his great fear seems to be not in change simply, but in indiscriminate change. This I think he need not worry about, as committees, if they did commence to make changes, would use their utmost endeavours to get capable men.

It is a curious fact that "An Old Provincial" adopts in support of his position my chief reason for objecting to the same adjudicators year after year. He implies that they become familiar with one another's methods, likes, and dislikes, and are prepared to give and take. Just so; and in this very give and take comes the great chance of unconscious injustice to exhibitors. At practically all exhibitions we find the competition singularly close in many classes—so close, in fact, that the result hinges on the taste of an individual. This is all very well in the first year, but suppose, as is often the case, the competition between those exhibitors continues as keen in succeeding years, and the same judges officiate, and the decision is based on the same point, what must naturally result? Simply that exhibitor No. 2 is not getting his deserts, but is being unjustly dealt with, as in all probability another set of judges would reverse the positions.

That such a position as this has arisen cannot be disputed, and the advantage of fresh judges is obvious. There is a tendency in this constant re-election of the same judges year after year to create small monopolies, and these are not good for the public at large. No doubt personal feeling enters into the question of change, as some of the older judges may fear that if an established engagement failed them they would not get another. This I think to be a false premise, as the re-arrangement would simply mean that they would go to fresh places, to judge the products of different exhibitors, displayed in dissimilar tents or places, and the entire novelty would awake an added interest in their work, with the natural result that that work would be better, or at any rate more carefully done.—AN INQUISITOR.

Garrya elliptica.

THOUGH this Californian shrub cannot be described as particularly showy, it nevertheless is a plant that might well claim more attention

value of the plant, for these catkins are at that dull period much appreciated by everyone. They impart a distinct, singular, and interesting appearance, as well to the shrub that produces as to the garden that contains them. Where a south or west wall is being furnished with plants this *Garrya* may well be accorded a place, and a little protection may be fixed over it in very severe weather. This is

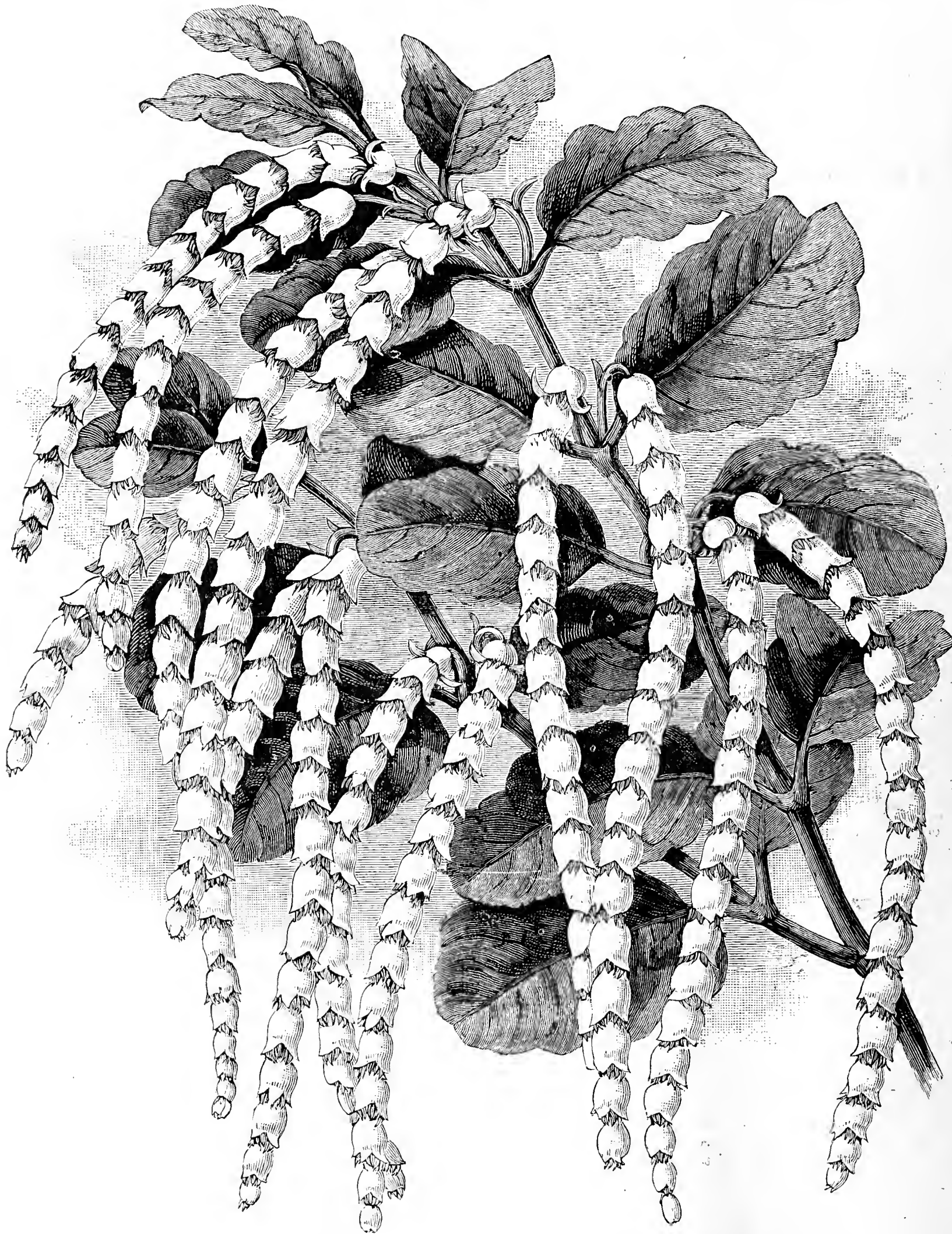


FIG. 79.—GARRYA ELLIPTICA.

than is at present given to it. The plant is an evergreen, and as most people know, has as its distinguishing feature long drooping catkins. These are produced in the winter, and herein perhaps lies the chief

rendered necessary from the fact that the plant is not perfectly hardy in this country, though it has been known to flourish considerably north of the Humber. One thing is quite certain, which is that this

Garrya will not thrive in a poor, imperfectly drained, soil. It is therefore necessary, prior to planting, to remedy any defect in the drainage, and at the same time to enrich the soil with good manure if this course seems advisable. Propagation may be effected by inserting cuttings in sandy soil under a hand-light late in the summer, or by layers in the autumn.

Referring to *Garrya elliptica* in the "English Flower Garden," the author says:—"A fine Californian evergreen and beautiful winter flowering shrub. In mild winters it begins to flower as early as December, and bears among handsome deep green leaves gracefully drooping, tufts of pale green catkins, which, if cut with the twigs, endure a long time in vases and are welcome in winter. Though often grown on walls, it is hardy and makes a dense bush, 5 to 8 feet high. In cold districts it is well to give it shelter, but in the south and west it does not require this. There are male and female forms, the more elegant being the pollen-bearing or male plant."

vulgare, which grows to great size and in the utmost profusion. Among the shrubs that everywhere decorate the expanse of grounds are to be seen thriving specimens of *Euonymus*, *Escallonia*, *Griselinia littoralis*, *Choisya ternata*, *Veronicas*, *Arbutus*, and *Aucubas*, many of which bear berries freely every year. The less hardy shrubs, however, have much to contend with, owing to the frequency and the strength of the prevailing north-westerly gales, which blow in from the Atlantic. On the south front of the mansion are to be seen two fine plants of Banksian Roses, white and yellow, and on the eastern side a very fine plant of *Magnolia grandiflora*.

Proceeding to the outskirts of the lawn, several fine evergreen Oaks (*Quercus Ilex*) rise to view; and upon further exploration, the visitor in another part of the grounds lights upon a disused quarry, approached by a tunnel cut out of the rock, and through which access is afforded to the church and the railway station. The quarry has in one corner a small pond, the surface of which is overspread with



FIG. 80.—PRIDEAUX PLACE.

Prideaux Place.

PRIDEAUX PLACE, the seat of Prideaux Brune, Esq., lies in close contiguity to the Atlantic Ocean, above the little town of Padstow, upon the north coast of Cornwall. The house (fig. 80) itself, built in the Elizabethan style, overlooks the picturesque quay of Padstow, and stands upon a broad terrace, from which there extends a charming view across the deer paddock and sand hills on the other side of the harbour. Beyond these rise the Cornish hills Rough Tor and Brown Willy, while from various parts of the well-kept grounds glimpses of charming pieces of harbour scenery are to be obtained.

The pleasure grounds, about 20 acres in extent, have as one of their most conspicuous features a profusion of spring flowers—viz., Snowdrops, Scillas, *Anemone apennina*, and Daffodils in great variety; but above all *N. telamonius plenus*. The position of these adds immensely to their effect, for they grow out of the Ground Ivy which forms a carpet under the trees, while around Primroses of white, yellow, and various other colours flourish in wild and uncultivated luxuriance. To these features may be added the Hart's-tongue Fern, *Scolopendrium*

Water Lilies (*Nymphaea alba*), and surrounded by *Gunnera manicata* Bamboos, and *Phormiums*. In the formal garden, represented in the illustration upon page 293, very good effects are obtained in summer by Cannas, Begonias, and *Lobelia cardinalis* Queen Victoria, of which there are about 600 grown annually, all doing remarkably well when receiving generous treatment from the watering pot. Specimen Ivy-leaved "Geraniums," and Fuchsias plunged in the turf also add to the general effect. On the left-hand side of this garden and extending much further is a long grass alley, which in former years was used as a bowling green.

The conservatory forms a by no means insignificant feature of the general panorama. Around the pillars of this cluster in graceful convolutions upwards to the roof *Tacsonia Van Volkemi* and *Cobaea scandens variegata*, the whole being thrown upon a background of *Asparagus plumosus* by the wall. During summer Begonias, *Campanula pyramidalis*, Cannas, and *Gloxinias* contribute greatly to enhance the charming aspect of this conservatory. Turning to the kitchen gardens, fruit, and plant houses, which are situated some distance from the house, we find a good collection of *Chrysanthemums*, and plants for decorative purposes and flower cutting, which are diligently requisitioned in the season. Much use is made of *Primula stellata* for

decorative work. Peaches do well upon the south walls, but other aspects do not serve so well owing to their exposure to the high winds, which are a great bane to the gardener, Mr. W. Brown. Tomatoes, however, grow well in the open, and are largely cultivated. A reserve garden serves to furnish Carnations and various sorts of herbaceous flowers for ornamentation of the rooms when occasion requires.—VISITOR.

[For the excellent illustration of the formal garden and the conservatory we are indebted to Messrs. Foster & Pearson, Ltd., Beeston, from whose splendidly produced new catalogue it was taken.]

Subtropical Bedding.

THE great charm of gardening lies in its many phases, which provide such diverse interests to those who have the "gardening instinct." Some enthusiasts delight in growing Cabbages, others are chiefly interested in the production of various kinds of fruits, and all are more or less interested in the flower garden and shrubberies, which lend themselves to such widely different styles of arrangement. Subtropical bedding provides a distinct feature in a flower garden, park, or even in the amateur's limited domain. The original idea in carrying it out was to so arrange plants of bold or graceful foliage as to represent tropical vegetation.

Many of the plants employed for the purpose are natives of tropical countries, and can therefore only be employed in the open air during the hottest part of the year, and during the remainder of the year they take up much valuable space under glass. There are, however, a number of others which may be raised from seed each spring, and if planted out early in June will grow into fine specimens during the summer, and when the autumn frosts despoil them of their beauty may be consigned to the rubbish heap. A few plants used for the subtropical bedding are quite hardy, and may therefore be left in their position permanently. The Pampas Grasses, Bamboos, and Funkias belong to the latter class. I will now deal with a few of the most suitable plants which can be raised from seed, and will refer to their arrangement in subsequent notes.

The Castor Oil Plants are unrivalled for the purpose, as they grow so rapidly and are always admired. The most popular variety is *Ricinus Gibsoni*, which produces dark purple stems and leaves, a colour so effective when seen under the brilliant light of summer time. *Ricinus roseus magnificus* assumes a bushier habit of growth than the former, and the seed vessels being of a beautiful rose-pink colour, form an additional attraction. Among the green-leaved varieties *R. zanzibarensis* stands out as a veritable giant. In habit of growth and leafage it greatly resembles that well-known greenhouse plant *Aralia Sieboldi*, but the leaves of the *Ricinus* are large, often measuring 2 feet across. *R. zanzibarensis maculatus* is also worth growing. The leaves are coppery-bronze when in a young state, afterwards changing to dark green with reddish ribs. The seeds should be sown in well-drained pots, and be covered with an inch of soil. A stove, or a frame placed over a hotbed, are excellent positions in which to raise the plants, but where such convenience is not at command they may be raised in a warm greenhouse. In order to facilitate germination steep the seeds in warm water for a few hours before sowing.

The fine new varieties of Cannas now so popular are as much, if not more, noted for the beauty of their flowers as for the boldness of their leaves. A packet of mixed seeds will often give some variation of sterling merit. The directions given above for raising *Ricinus* are equally suitable for Cannas, but the latter plants will not grow very large during the first season, and should be lifted early in October, stored under a greenhouse stage, and kept dry at the root till the following February. If they are then repotted young growth will be produced. Very little water will be needed till the roots become active, then the supply must be gradually increased. During the summer such plants make fine clumps for the centre of a flower bed or the background of a border. Those who prefer to keep them in pots should give them a light position in the greenhouse, and water occasionally with liquid manure; they will then prove by no means the least attractive inmates of that structure.

The *Dracaena*-leaved Beet (*Beta chilensis*) is quite distinct from the edible kinds, and the broad highly coloured leaves make it worthy of a place in any garden or shrubbery. Sow the seeds in a greenhouse or frame during March, or in the open air at any time throughout April. *Wigandia caracasana* and *W. imperialis* are rapid growing plants, which in one season attain a height of from 4 to 6 feet. If large plants are required, sow the seed at once; if only moderate sized ones, defer the sowing till the end of April.

The striped Japanese Maize (*Zea japonica variegata*) is an exceedingly graceful plant, which the garden artist may turn to

advantage in a variety of ways. A well-grown specimen looks particularly well in the centre of a flower bed, or a larger bed planted with a groundwork of Beet, with Zeas disposed 3 feet apart, and a *Dracaena Veitchi* or *Chamærops humilis* as a central plant forms a very effective combination. After being soaked in water, the seeds should be sown at once. I like to set them in boxes an inch apart, transfer to 3-inch pots when the young plants are 3 inches in height, and pot on when necessary.

Nicotiana affinis, the Sweet-scented Tobacco Plant, which has broad, dark green leaves and tall spikes surmounted by white flowers, is often employed for subtropical bedding. If seeds are sown at once in a warm greenhouse or stove good plants may be grown by June. *Acacia lophantha* and *Grevillea robusta* are greenhouse shrubs which have elegantly formed leaves, and are largely employed for bedding as well as for decorative work in pots. In order to get plants 3 feet in height by June the seed ought to be sown in September. Any old plants now at command if repotted and well attended to will surely prove useful at bedding out time, no matter how large or of what shape they may be. Plants 5 or 6 feet in height are often just the things required to form a background or a prominent object in the angle of a bed or border.

Perilla nankinensis, a dark, almost black, foliaged annual, is very effective when used for massing. It grows very quickly, and attains a height of 2 feet. Seeds should be sown on a hotbed or in a warm greenhouse. *Chamæpeuce diacantha*, a Thistle-like plant, having green leaves marked with silvery lines, is excellent for filling large or small beds. Sow the seeds at once in a warm greenhouse.

The well known Blue Gum Tree (*Eucalyptus globulus*) is quite indispensable for subtropical bedding, as it attains a great height, and in sheltered position in the south of England will withstand the rigours of our winters for years. One-year-old plants should be employed for planting, and often if large specimens are required these can be potted in the autumn and wintered in a greenhouse when grown in positions where it is not safe to leave them in the open air.—H. D.

Melons.

At a recent meeting of the Kingston Gardeners' Society, Mr. Turner of Fulham Palace Gardens gave a practical paper on Melons. The essayist described the methods of culture adopted by the late Mr. Gilbert at Burleigh and by Mr. Woods at Osberton Hall. The best Melons, in his opinion, were grown in low span-roofed houses with a 6 feet wide bed in the centre with a pathway around. The seeds were sown singly in small uncrocked pots, and afterwards transferred to 6-inch pots, using if possible loam from a grazing pasture. A fermenting bed was formed upon which the soil was made very firm and the plants put out on hillocks 3 feet apart on each side of the bed and trained up stakes leaning towards the pathway and the sides of the house. The temperature was kept at about 70°, and air admitted above that figure; no shading was given to the plants.

Frequent top-dressing served the double purpose of giving fresh rooting space and of keeping the roots from going down into the fermenting bed, which is detrimental to the plants. Early flowers were removed until sufficient growth had been made to insure five fruits set at one time. The shoots were stopped at one leaf beyond the fruit. Stimulants were given in the form of guano dissolved in water. Mr. Woods' system was to take up three shoots from each plant, obtaining three to five fruits on a plant; other details were similar to the foregoing.

Mr. Turner then proceeded to point out that Melons could be grown in boxes in any plant stove without the aid of a fermenting bed. Where there is no space for a hotbed, and where for some reason it is difficult to make the ordinary bed of soil, boxes will be found convenient, these being 2 feet long by 18 inches wide, and 10 or 12 inches deep. Boxes were better than pots, but if the latter were used they should be plunged in some material; one fruit on a cordon in a 12-inch pot was about the usual practice. This does not apply to boxes in which the plants may be heavily fruited.

An important cultural point was to avoid heavy syringing, as this was the chief cause of spot and canker, and for the latter there is no known cure, although lime and charcoal rubbed into the affected part will arrest the progress of the disease. The choice of varieties was left to each cultivator.—J. T. BLENCOWE.

VITAL ENERGY.—Live plants are plants with their particles in motion building up the plant's structure. This motion is known as vital energy. Physical energy results in decomposition. The material out of which plant structure is formed is known as protoplasm. The forms of flowers result, says a transatlantic contemporary, from varying degrees and directions of vital energy; but what starts the motion in protoplasm, and so directs the energy that a little cell may develop in one instance to an Oak, or in another to a Buttercup, has not been demonstrated. We speak of vital force, or life energy, as a fact, but no one has yet discovered what starts the movement.



The Hildesheim Rose.—It is reported that Hildesheim's famous thousand-year-old Rose bush, which it had been feared in the last two years was dying, has sent out new shoots and runners from a thick root-stock, and seems now to be safe to last for a good many years to come. The plant did not flower last summer.

The Anemone.—The Anemone, or Windflower, is common enough throughout the Home Counties, more especially on the borders of woods, where it may be found in the middle of March. What are frequently taken for the petals are sepals. As in the case of the Marsh Marigold these are coloured, and the petals are not present. A variety of the Anemone is the Pasqueflower (*A. pulsatilla*). It is of a purple colour, and, unlike the Wood Anemone, secretes honey. It may be found in various parts of Sussex, and notably in the woodlands about Uckfield. The Pasqueflower has a thicker stem, covered with silky hairs. Years ago it was a fashion to stain eggs with the juice of the Pasqueflower—Easter eggs, they were called.—("Echo.")

Influence of Electricity on Germination.—Some remarkable experiments with electricity have just been made. On an egg which was being hatched it was found that an electric current of sufficient strength to kill the fowl did not destroy the vitality of the germ in the egg. But the chicken when hatched was one of abnormal shape and monstrous in appearance. Experiments with seed proved that a seed planted in the ground does not grow as quickly as one rushed in its development by electricity. Two lots of twelve groups, each of 112 seeds, were soaked in water and placed in cylindrical glass vessels open at each end. The receptacles had dipping into them copper discs to which a current was applied. The seeds were kept at a temperature of 50°. The seeds treated electrically grew 30 per cent. quicker than those treated in regular manner.

Long Life of Seeds.—An interesting fact has been observed by Colonel Thompson during the past two years. A little plant called *Pilea microphylla* has constantly come up in the pots in which jadoo fibre has been used, and as this plant is a native of the West Indies and tropical America, it is clear that it comes from the moss, which is obtained solely from Yorkshire, and which is used in the preparation of jadoo, though in this climate the *Pilea* cannot grow in the open air. The surmise of the colonel is that the seed was deposited in the moss ages ago when a tropical climate prevailed here, similar to what it was in the mid-Eocene period. If this conjecture is correct, we have some extraordinary testimony in favour of the great vitality of seeds, far surpassing anything that has been advanced in this connection before.

Galax Leaves.—These leaves, which within a few years have become so popular in floral design work, are gathered in the mountains of North Carolina and Eastern Tennessee. Picking begins early in September, but the leaves cannot be shipped safely by freight until later. The bronze leaves, which are in much greater demand than the green, cannot be got until about the middle of November, when the rich colouring is caused by successive frosts. The pickers put the leaves in bundles and take them to the general merchandise store, where they are received practically as cash at about 25 cents a thousand. The receivers have no regular arrangement for storage of large quantities, and aim to unload the material as fast as received, which they usually do, as the demand about equals the supply. Dealers north place contract orders with them for certain quantities to be delivered at their convenience between specified dates. The leaves are packed dry with a little sphagnum moss among them, which supplies all the moisture they need. They keep better and travel better if frozen; in fact the same conditions that are required for hardy Ferns in storage just suits them, and most of the damage to them comes from the same cause that injures the Ferns—heating in transit. The dealers place them in commercial cold storage houses at about 28° Fahr., and if in good condition when stored thus they will remain so for an indefinite period. Florists after receiving them should, says the "American Florist," aim to keep them constantly in a temperature below freezing until ready to use them.

A Wonderful Tree.—It is said that a great many Burmans are being attracted just now to Amarapura to visit a Banyan tree at that place, which is said to be yielding rather a plentiful supply of water. Incisions are made in the tree, and as the water exudes it is caught up in bottles and other vessels and carried carefully away. The people believe that this water has numerous medicinal properties, and is very efficacious in the cure of almost all diseases flesh is heir to, especially blindness. It is described by one who has drunk it to be very cold and not unpleasant to the taste.

Frost Flowers.—The phenomenon called "Frost Flowers" was discussed before the Biological Society in Washington, U.S.A., recently, by Dr. L. H. Dewey. The so-called flowers are composed of ice, which forms on frosty mornings in autumn and early winter on certain plants. The peculiar thing to be explained is that frost flowers do not form on all plants, but only on about twenty-six species, as far as is yet known. Among these are Frostweed, Dittany, Marsh Fleabanes and cultivated Heliotrope. The phenomenon is apparently due to capillary movement of water in the plant, but a wholly satisfactory explanation is lacking.

Orchards and Fowls.—At Ruxley Lodge, Esher, are several considerable orchards, old and new. When walking through one of the older ones, perhaps a couple of acres in area, a few days since I remarked to Mr. Miller, the gardener, that the fowls who had the run of the orchard seemed to scratch freely in the surface dressing put down. He remarked, "Yes; I have let the poultry run here for two years, and for that time have never been troubled by insect pests." Now it is his practice to accumulate an immense quantity of leaves from all descriptions of trees, as most gardeners do in such places, and to utilise them for creating some warmth for frames in the spring. In the early winter, ere the new leaves are collected, this leaf matter, for it is not yet soil, is removed into the orchard, where some is cast about under the trees, and thus constitutes excellent dressing, whilst the remainder is put into a large heap to more completely decay. Naturally such material is eminently calculated to contain insect life, but if so, at least it is soon devoured by the poultry, for they search it and scratch it so continuously that poor indeed is the chance for egg, grub, maggot or larva to escape. The dressing feeds the soil, which is of deep sand, remarkably well, and retains moisture much longer than it would were it not so mulched. There are huge crops of Apples so obtained at Ruxley Lodge, although many of the varieties there are those that no one would plant now. But not far off on lower ground there is a fine orchard on clay planted a few years ago, where good varieties of both Apples and Pears do remarkably well, and doubtless will for many years. Close by, within the ancient enclosed abbey garden, is a Blenheim Pippin espalier, evidently 150 years old, that still carries fine fruit.—A. D.

Late-keeping Apples.—At the last meeting at the Drill Hall, amongst other Apples sent, for so late in the winter, in capital preservation by Mr. Parker from Goodwood, were really good and fresh Sturmer Pippins. I have found this variety to keep well from retentive soil, but I hold with it, as with so many other Apples, that much of the keeping properties depends on the period at which fruits are gathered. Sturmer Pippin wants a long season to finish it well, and my judgment is in favour of growing it as espaliers, because not only can the trees in such case be netted over if desired, but the fruits suffer no harm from rough winds in the autumn. The Sturmers that came from Goodwood, whilst not only plump and fresh, had undoubtedly the best flavour to my taste, certainly King of Tompkin's County obtained an award of merit for its soft pleasant eating flesh just then, but it had no special flavour. Such an award was given, doubtless, because the fruits had kept so well. But I emphasise in the matter of getting both Apples and Pears to keep well, Mr. Woodward's treatment of his trees at Barham Court, where he specially waters liberally all that are to carry crops late into the autumn. Such soaking helps materially to fill the fruits with sap and the trees to retain the fruits so much longer. To these liberal waterings are added mulches of manure also. Such soakings are exceptionally needed when we have very dry autumns, for we must not forget that whilst moderate rain may penetrate a few inches into the soil and greatly assist crops, only thorough soakings get down and assist tree roots. Cox's Orange Pippin, which when well done keeps to the end of February, as mentioned by "E." is yet naturally an earlier ripener than is Sturmer Pippin. Mr. J. Crook gets fine long-keeping Cox's from standard trees grown in his orchard beside the river Exe at Forde Abbey, Chard.—A. KINGSTON.



Rose Show Fixtures in 1900.

- June 27th (Wednesday).—Salisbury (N.R.S.) and Richmond (Surrey).*
- „ 28th (Thursday).—Canterbury.
- „ 30th (Saturday).—Windsor.
- July 3rd (Tuesday).—Westminster (R.H.S.), Gloucester, Harrow and Sutton.
- „ 4th (Wednesday).—Croydon, Hereford and Reigate.
- „ 5th (Thursday).—Bath and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Wolverhampton.†
- „ 12th (Thursday).—Brentwood, Eltham and Salterhebble.
- „ 14th (Saturday).—New Brighton.
- „ 18th (Wednesday).—Cardiff.*
- „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
- „ 24th (Tuesday).—Tibshelf.

* Shows lasting two days. † Show lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Roses and the Frost.

THE winter we have just passed has been a pretty severe one, and on several occasions here (Surrey) the temperature was low enough to test the hardiness of Roses. Hybrid Perpetuals without any protection have passed unharmed, as they usually do; but it is the Teas which cause one to be somewhat uneasy during severe weather, and which rarely get through our usual winters without harm to some sorts being done.

The only variety plants of which are completely killed is Comtesse de Nadaillac, a beautiful Rose truly, but one that is unsatisfactory in growth with most people. Bridesmaid, another fine Tea Rose, has suffered considerably, as well as others of the family of sports, or rather, the type Catherine Mermet, the above offspring and The Bride. These are a bit delicate in the open, but by protecting them we may generally save the lower portions of growth, which is sufficient to give new life. Cleopatra, Princess Beatrice, La Boule d'Or, Luciole, Ma Capucine, Niphetos, Princess of Wales, Souvenir d'Elise Vardon, and even Madame de Watteville and Madame Cusin are tender Roses which, except for purposes of showing, are hardly worth attempting in the garden. As exhibition flowers they are, with one or two exceptions, fine; and one is inclined to risk their faults of tenderness and want of vigour, even in summer time, with the hope of obtaining a good bloom now and then, rather than discard them altogether.

That choice Tea Maman Cochet is really a splendid production. Not only are the blooms lovely in themselves, but the plant is so free to grow and hardy. This type of Tea Rose is the one to encourage; there are no disappointments in store for those who cultivate such. We are not overdone in good hardy, free-growing Tea Roses that give finely developed blooms as well. Anna Olivier is one; Ernest Metz seems only fairly hardy; Hon. Edith Gifford will withstand a severe winter; Innocente Pirola is but fairly robust; and Francisca Kruger and Madame Lambard, although hardy and good in every respect save one—that is, the blooms are not up to exhibition form—are for that reason not popular among the choicest. In this category are Souvenir de S. A. Prince and Souvenir d'un Ami, otherwise they are excellent for general culture.

The newer class of Hybrid Tea Roses appear to be hardier generally, but that best of all among them, Mrs. W. J. Grant, is none too hardy with us. Several plants have failed. Kaiserin Augusta Victoria, a lovely creamy white, is hardy, and Caroline Testout will grow well anywhere. Marquise Litta passed the winter well, and is deserving of the most extended culture. Grace Darling, not a reliable show Rose, is one of this class, really beautiful as a garden variety. Lady Mary Fitzwilliam and White Lady seem hardy, but we cannot get enough growth into the trees to make them satisfactory varieties to plant. Viscountess Folkestone is excellent; there are, indeed, few better garden Roses, and sometimes one may cut from it a choice show bloom. It is hardy and very free.

The Roses that suffered to any extent were the newly planted ones. These are on standard stems, but were protected with hay at the junction of stock and scion. Probably it is only the tenderer varieties of Tea Roses that need any protection, at least in a somewhat favoured county. In the nurseries of the neighbourhood hundreds of thousands of Roses are cultivated without being in any way protected. Still we do not find, even among this large number, the very tender sorts named grown in quantity. They are left to those, like ourselves, whose desire is to get examples like those we meet with and admire at the Crystal Palace and other shows.—H. S.

Curing Foliferous Vines.

THERE are several things that may have a tendency to encourage Vines in other structures as well as greenhouses to produce foliage at the expense of fruit. The first essentials to strive for in commencing to cure Vines of this fault are new growths, allowing these to extend in full exposure to light, and pruning the well-ripened stronger wood to plump buds. An average heat of 55° is too high for a greenhouse Vine at this time of year; it implies forcing, or a temperature in which a Vine cannot rest.

During winter, or from November to March inclusive, the temperature of a greenhouse with a Vine in it should not exceed by artificial means 40° to 45° at night, and the latter in the daytime. In mild periods it will range rather higher, but this will do no harm provided air is given at 50°, and the temperature is not allowed to rise much higher without full ventilation, closing the house at 50°. All the heat over 45° should be due to mild weather or sun heat; thus the Vine will have rest from the fall of its leaves to starting again naturally in the spring. This, under the conditions named, will be early in April; and after this the temperature must be kept from falling much below 50° at night when the Vine comes into leaf, a little ventilation being given at this stage and freely at 65°, which will be good for both Vine and plants. The heat will rise much higher from sun influence, and there is no need to husband it beyond closing, or nearly so, at 65°. The Vine will make rapid progress during the latter part of April and during May, after which fire heat may be dispensed with unless unusually cold, but only to prevent the temperature falling below 50° at night. A little warmth in the hot-water pipes when the Grapes are ripening will be of service.

Old Vines are rather prone to become weak in the wood, especially on the spur system, and the "cure" in such cases is to encourage new canes from the base and cut away the old in their favour. Supposing the Vine is trained along the eave of the house and the rods are taken from this part up the roof and have spurs along them at 15 to 18 inches apart, we should select a promising growth near the base of each rod and train it up the roof. When this has been done gradually cut away the old cane from below upwards, so as to give each new cane the full benefit of the light, pinching the laterals at the first joint, and the sub-laterals to every leaf as made.

When the cane has grown 3 feet, stop it a joint above that length and take the lateral from the uppermost break forward as leader, and when it has grown another 3 feet repeat this procedure, and stop this when 1 foot from the top of house, all the laterals and sub-laterals being pinched to one leaf as made. The canes thus made will be strong, have firm wood and plump buds, and when the leaves have fallen they may be shortened to a promising bud about 2 feet 6 inches from the base, cutting the lateral close to the cane. In the following spring take a shoot from the uppermost bud forward as leader, subjecting it to the same treatment as in the preceding year, and from the other growths select four, two on each side of the rod, about 15 inches apart, rubbing off the rest. Stop these at two joints beyond the shoot for fruit when the leaf at the joint is the size of a penny, and stop the laterals and sub-laterals to one joint as made. It is not advisable to crop the leader until another year.

In the winter prune the leader to about 2 feet 6 inches, and the side shoots to two buds. In the third year take a cane to within 1 foot of the top of the house before stopping; take also four shoots from the one-year-old part, and of the shoots springing from the growths spurred in to two buds select the most promising one on each and rub the others off. The cane at the winter pruning should be shortened to about 2 feet 6 inches from the top of the house, and the side shoots and spur growths to two buds each, and the following year the Vine will be in full bearing, and will continue to carry fruit for some years to come.

It would also be found advantageous to apply a half-inch dressing of air-slaked lime, pointing in with fork as deeply as the roots allow. The border may then be top-dressed with a mixture of dissolved bones three parts, sulphate of potash two parts, and sulphate of magnesia one part, mixed, using 4 ozs. per square yard, and scratching in lightly with a fork. If the soil be light it would be a further advantage to mulch the border with about an inch thickness of horse droppings, supplying liquid manure occasionally in dry weather.—G. A.

Brighton Show.

April 3rd and 4th.

THE ninth annual spring show of the Brighton and Sussex Horticultural Society was held in the Pavilion, and proved worthy of the best traditions of the Society. Both halls were well filled. The groups of plants and tables of Orchids were the chief features. The competition in the majority of the classes was below the average.

There were two entries in the class for a group of flowering and foliage plants, to occupy a space 13 feet by 7 feet. Mr. Geo. Miles, Victoria Nursery, Brighton, was placed first with an effective arrangement of spring flowering plants, chiefly composed of Azaleas, Clivias, Cyclamens, Ericas, Daffodils, Tulips, and Primroses. Foliage plants were agreeably dispersed throughout, the small Ferns, Asparagus, and Aralias being conspicuous. Mr. J. Hill, gardener to W. Wallis, Esq., Springfield, Withdean, was second with a good informal arrangement of taller plants than those in the first prize group.

Two beautiful tables of Orchids were arranged with Ferns, the first prize falling to Mr. J. Harper, gardener to E. A. Tucker, Esq., Vernon Lodge, Preston, who staged a gay table, on which the most

class for twelve pots of Polyanthus Narcissi, and he well merited the first prize which was awarded. The plants were just in the acme of condition. The same exhibitor was also an isolated first for twelve pots of Narcissi, staging some good Horsefieldi, Emperor, and Princeps.

For twelve pots of Cyclamens, Mr. C. Murrell, gardener to Mrs. Jenkins, Franklands, Burgess Hill, was well to the fore with a good variety of plants, followed by Mr. Geo. Miles. Azalea indica was represented by two exhibitors. Mr. F. Collis, gardener to Mrs. Hughes, Preston Park Avenue, proved the victor with well-flowered plants of medium size, while Mr. J. Hill was second with plants that were far from ready. The Deutzias were only moderate in quality. Mr. J. Hill was placed first, followed by Mr. H. Head, Hove. There was a better competition for six pots of Dielytras, Mr. H. Head staging six beautiful plants, while Mr. W. E. Anderson was second with larger plants, but they were not ready, and Mr. Geo. Miles third.

The class for six pots of Richardias was excellent, and the competition good, Mr. J. Harper securing premier honours with plants carrying from six to eight splendid spathes. Mr. W. E. Anderson was second with larger plants, carrying more flowers, but they lacked the quality so prominent in the first prize entry; Mr. G. Miles was third. For twelve Genistas Mr. H. Head was placed first for large plants, beautifully grown and a mass of yellow flowers. Messrs.

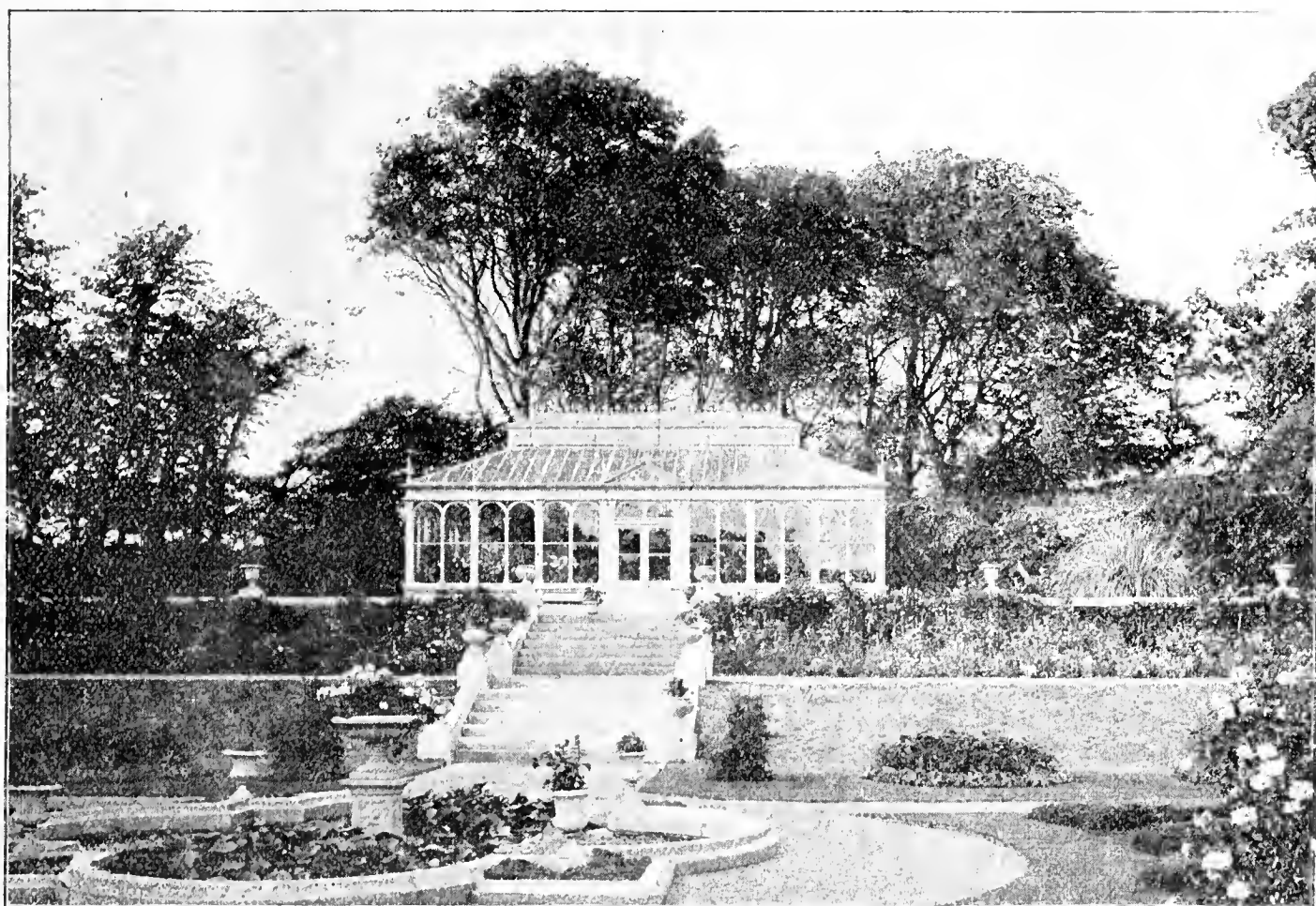


FIG. 81.—CONSERVATORY AT PRIDEAUX PLACE. (See page 289)

prominent plants were some good *Odontoglossum crispum*, *Oncidiums* in variety, *Dendrobiums Ainsworthi*, *Wardianum*, and *nobile*, with a few choice *Cattleyas*; and Mr. H. Garnett, gardener to R. G. Fletcher, Esq., Mount Harry, Preston, was second, staging some choice *Odontoglossums*, *Cattleyas*, and *Dendrobiums*, the groundwork of Ferns effectually hiding the pots.

The competition for twelve Hyacinths brought out a good competition, but there was nothing startling in the quality. Mr. W. E. Anderson, gardener to B. Parish, Esq., Preston Park Avenue, Brighton, was first with good spikes of *Norma*, *King of Blues*, *Gigantea*, and *Charles Dickens*. Mr. G. F. Bunney, Lewes Road, Brighton, was a capital second, and Mr. J. Harper third with an even display.

Twelve pots of Tulips only secured two entries, but they were both good, Mr. W. E. Anderson having good specimens of *Keizers Kroon*, *Cottage Maid*, *Vermilion Brilliant*, and *L'Immaculé*, and Mr. J. Harper was second with a bright, fresh collection, though hardly so developed as the other exhibit.

Strange to say the prizes for six Primulas were all awarded to white-flowered plants. Mr. G. Hart, gardener to H. Head, Esq., Shoreham, was placed first with good fresh plants; Mr. W. E. Anderson was second; and Mr. J. Hill third. The class for twelve pots of Lily of the Valley made an imposing display. Mr. A. E. Golding, gardener to H. G. Vowles, Esq., Dyke Road, was first with some well-developed plants, carrying plenty of spikes. Messrs. W. Miles & Co., Church Road, Hove, was second; and The Brighton Florists' Stores third. Mr. J. Harper was the only exhibitor in the

W. Miles & Co. were a good second, and the Brighton Florists' Stores third. Mr. J. Harper had the best six pots of *Lilium Harrisii*, followed by Mr. W. E. Anderson, while Messrs. W. Miles & Co. brought up the rear.

In the class for twelve bunches of Narcissi Mr. J. Harper was first with a bright fresh collection, which included *Henry Irving*, *Empress*, *Emperor*, *Golden Spur*, and *Sir Watkin*. Mr. M. Tourle, gardener to F. Barchard, Esq., Uckfield, was second with excellent bunches of *Victoria*, *Empress*, *M. J. Berkeley*, and *P. R. Barr*. *Mignonette* was well staged, Mr. J. Mills, Kingston-by-Sea, being first with six grand pots. The Brighton Florists' Supply came second, and Mr. G. Hart was third, both with weaker exhibits.

There were two competitors in the class for ten Orchids, and Mr. H. Garrett won easily with a grand specimen of *Cymbidium Lowianum*, a well flowered plant of *Dendrobium Dalhousianum*, *Cypripedium levigatum*, *insigne*, and *Rothschildianum*, also *Cattleyas Trianae*, *T. Fletcherianum* and *Mendeli*, with a beautiful plant of *Odontoglossum Andersonianum*. Mr. J. Harper was second with much smaller specimens. The *Cinerarias* were bright and contrasted well with the golden *Genistas*. Mr. L. E. Cooko, gardener to Miss Smith, Withdean, was first with a pleasing variety. Mr. G. Hart was second with dwarfier plants that will improve. The colours were excellent.

Messrs. W. Balchin & Sons, Hove and Brighton, arranged an artistic group of flowering plants and Ferns, with a few specimen Palms. The large blocks of *Dendrobium nobile*, *Anthuriums*, *Azaleas*, *Hydrangeas*, and *Cyclamens* were excellent, and the edging of *Isolepis* and *Asparagus Sprengeri* formed a pleasing front.

The Young Gardeners' Domain.

Bouvardias.

BOUVARDIAS are very useful for supplying large quantities of cut flowers during winter, and the plants look very effective when tastefully arranged in the flowering house or the conservatory. In February or March the old plants should be pruned, and then be placed in a warm moist temperature, where they will soon produce a plentiful supply of young shoots; the tops of these should be taken off when several inches long, and rooted in pots of sandy soil in a propagating case. Or the roots of some old plants may be cut into lengths and placed in pans of sandy soil; these will soon make fine little plants if the pans are plunged in a bed where there is a moist bottom heat, and are covered with squares of glass.

When the young plants are large enough they should be placed into 3-inch pots, using a mixture of peat, loam, leaf soil, and sand in equal parts; the pots should be placed in a heated pit or frame where they will be near the glass, the temperature of the pit being about 60° or 65°, and gradually reducing it as the plants gain strength. They must be carefully watered, and should never be allowed to become dry; nor should they be kept constantly saturated with water, or they will soon become unhealthy. The points of the shoots should be pinched out to insure a bushy habit, and when the pots are full of roots put them in 4½-inch or 5-inch pots, using a similar compost as before, but with rather more loam. The plants ought to be neatly staked, and be placed in a close frame for a few days. When established in these pots the frame should be freely ventilated, gradually hardening the plants until in June they can be planted out in the open, fully exposed to the sun, in good rich soil, where they must be well looked after, watering them at the roots and frequently syringing them on bright days; the points of the shoots should be pinched out about twice during the summer.

Early in September the plants must be carefully lifted and placed in 6 or 7-inch pots. They should be stood in a frame and kept close and shaded for a few days, frequently syringing them until they get over the shift they have undergone. They should be placed in a greenhouse where a temperature of 55° is maintained when required to flower, and be fed with weak liquid manure twice a week. Some of the best varieties of Bouvardias are Alfred Neuner, candidissima, Hogarth, Humboldtii corymbiflora, President Cleveland, President Garfield, The Bride, Thomas Meehan, Triomphe de Nancy, Victor Lemoine, Vreelandi, and Vulcan.—F. W. P.

Cyclamen Culture.

FEW flowering plants are more useful during the winter months than Cyclamen persicum, as they will throw up such an abundance of flowers over a long period. The seeds should be sown thinly in clean, well-drained, shallow pans, early in August in a compost consisting of fine loam, leaf mould, and sand. Place the receptacles in a shallow frame which has a temperature of 60°, and cover them with a pane of glass and a sheet of paper, as this will favour rapid germination. Keep the soil moist, but on no account have it wet. As the seedlings appear above the surface remove the paper and glass, and place the pans as near the roof-glass as possible, but they will require a light shading when the sun is very bright. When the seedlings are sufficiently strong remove them to a house which has a temperature from 55° to 60°, standing the pans on damp cocoa-nut fibre refuse, and again as near the glass as possible, otherwise they will become drawn; give them a light syringing occasionally on bright days.

When the young plants are large enough to handle they will require potting, as if allowed to remain in the seed pans for a long period they will be weakened. Thumb pots are a suitable size for this work, having them well cleansed and drained, and using a compost similar to that for the seed pans, with a little less sand, and affording the same temperature. Give a thorough watering after potting, and again when required. Protect the young plants from the bright sun, but do not apply the shading too heavily. Keep them close for a time until root action commences, and never allow any cold draughts to enter.

After the plants have made a fair amount of roots they will require another shift, and well cleansed and drained 3½-inch pots will be found suitable. Use a compost of good fibrous loam, leaf mould, and sand, a little artificial manure and charcoal, but be sparing with the manure. Do not pot too deeply, but keep the corms well above the soil, otherwise they are liable to decay. Have the plants as near the glass as possible, which will insure sturdiness in growth. Syringe the plants once or twice daily when the weather permits, as this will keep all pests in check. The plants will require another shift when they are well furnished with roots, this time into 6-inch pots, using a similar compost to that for the last potting, but having a little more loam. Keep the house close for a few days, and when root action has well commenced admit air on all favourable occasions, gradually increasing it, as this will cause the plants to grow harder and prepare them for standing in cold frames.

At the end of May or the beginning of June the pots may be plunged in coal ashes in cold frames, and not having them too closely together, so that the air can pass freely between the plants. Admit abundance

of air on all favourable occasions, but during sunny weather the lights should be put on and tilted front and back, and shading placed over them to protect from the sun. The watering must always be carefully done; they will require little manure at present, but an occasional application will keep them a good colour. The syringing must not be neglected, doing this twice daily. Examine the plants occasionally, and remove all decayed leaves and flower buds as they appear.

From about the middle of August discontinue syringing and shading, unless it is exceptionally hot. Early in October the plants should be taken in the house where they are to bloom, but prior to this all preparations should be made, such as having the house thoroughly cleansed. When the time has arrived for this have the pot well cleansed, so as to give a neat appearance when staged, and do not place them too closely together. A suitable temperature is about 55° at night, but during severe weather a few degrees less will prove better for them. Admit plenty of air when the weather is favourable, thus keeping the plants sturdier and healthier. Any time on perceiving green fly fumigate with XL-All vaporiser, which will promptly destroy the pest.—P. R.



Fruit Forcing.

Cherry House.—Trees heavily laden with fruit require more nutrient than those with few fruits, but regard must be had to the vigour of the trees as well as to their crops, applying liquid manure to weakly trees carrying heavy crops, and water only to those of full habit with relatively moderate burdens of fruit. A good soaking of these elements most suited to the trees should be given, and as often as required, to maintain the soil in a thoroughly moist state, but not to induce a sodden and sour condition. Attend to ventilation and temperature, admitting air from 50°, and liberally at 65°. Syringe the trees twice a day, and keep the surface of the border damped. When the shoots have made four or five joints they should have the points taken out, so as to form spurs; but those for furnishing the trees ought to be tied in position early, and be carefully trained in their full length. Aphides must be kept under by repeated fumigation, as if they obtain a hold they are not only difficult to exterminate, but spoil the appearance of the fruit.

Pines.—*Suckers or Plants Started in March.*—When the pots of these are full of roots, but before the plants are root-bonnd, shift them into 10, 11, or 12-inch pots, watering them a day or two previously, so as to have the soil moderately moist when they are potted. Examine the beds, replenishing them if need be by the addition of fresh tan, mixing it with the old to a depth that will afford the required temperature, 95° at the base of the pots until the roots reach the sides, when 90° is more suitable. Keep the air about such plants well charged with moisture, employing no more fire heat than is absolutely necessary to maintain a temperature of 70° to 75° on mild nights. Ventilate slightly at 80°, liberally at 90°, closing with sun heat at 85°, at which time syringe the plants. Examine the plants twice a week, and water those that require it.

Plants Started into Fruit Early in the Year.—These are fast approaching the flowering period, and will be benefited by an occasional sprinkling at the time the house is closed; but when in flower they must not be so treated. The foliage being as yet tender, it will be desirable, in the case of houses with large panes of glass, to afford a slight shading for an hour or two in the hottest part of the day for a few weeks until the leaves become inured to the sun's influence. When the flowering is over the fruit will advance rapidly if the roots are in good condition, and plentiful supplies of liquid manure will be requisite. Attend to ventilation early in the morning, commencing when the temperature is at 80°, and closing at 85° with sun heat. Keep the atmosphere moist when the house is closed, and the bottom heat at 80° to 90°, night temperature 70°, 75° by day artificially. As the suckers appear remove all but one to each plant.

Vines.—*For Early Work.*—Vines in pots afford creditable crops of early Grapes. The Vines should now be in the pots they are required to fruit in, and have the growths trained as near to the glass as possible without touching, so as to secure thoroughly ripened wood. Stop the laterals at the first leaf, and the sub-laterals at one joint, and to every subsequent joint as made. Under this treatment the growths will be sturdy, food largely stored in the canes, also in the well-developed buds, and the wood ripen early and thoroughly.

Grapes Ripening.—Vines in pots have the Grapes advanced in ripening, and require very moderate supplies of water at the roots. To insure a full swelling on planted out Vines inside borders must not lack moisture, but an excessive supply may conduce to shanking and bad finish. A full crop of Grapes is a great strain on the energies of the Vine, especially early forced, and through it perfection in colour is not

always attainable. Much may, however, be done by a liberal and constant supply of warm rather dry air, combined with a rather low night temperature of 60° to 65°, but that in the daytime must be well maintained at 70° to 75° from fire heat, and 80° to 85° with sun heat. Red spider usually makes its appearance on early forced Vines about the time of the Grapes commencing colouring, and the small colonies on the under side of the leaves must be removed with a sponge moistened with a solution of soft soap, 2 ozs. to a gallon of water. As a preventive measure the hot-water pipes may be coated with a mixture of sulphur and skim milk. Care, however, must be taken not to overdo it, or the fumes will act injuriously on the skin of the berries and spoil their appearance. The sulphur vapour is more injurious to the skin of white than black Grapes, Frontignans and Muscat of Alexandria suffering most.

Succession Houses.—Stop and regulate laterals so as to secure an even spread of foliage without crowding. Where there is not room for extension, it is unwise to allow the growths to extend considerably, so as to necessitate a large reduction of foliage at one time, as this results in a check, which often induces shanking at a later period. Attend to thinning the bunches and berries, under rather than over-cropping the Vines. Make sure that the borders have a due but not an excess of water. Vines swelling their fruit should have a moist atmosphere, securing this by damping the paths two or three times a day, and if liquid manure be used at the latest sprinkling it will improve the Vines and act as a check to red spider. Stable and cowhouse drainings diluted down to the colour of mild ale, or an ounce of guano to a gallon of water, is sufficiently strong for damping down with, not using more than a 4 gallon canful to 30½ square yards.

Late Vines.—Disbud and tie out as the growths require it. Close the house early in the afternoon with sun heat, and ample atmospheric moisture secured by damping the paths and borders. Vines that were started in March are making rapid progress, and must receive every encouragement, but avoid hurrying their growth by a close atmosphere and high night temperature, ventilating judiciously early in the day so as to secure sturdy growth, short jointed wood, and well formed, thick, leathery leaves.

Young Vines.—Last year's planted canes will now be breaking naturally, and when the growths are fairly on the move a little fire heat will prove beneficial, especially on cold days. When the growths are about half an inch long, gradually remove those not required, leaving the shoots for bearing or forming the side growths or spurs not closer than 15 to 18 inches on each side of the cane. If fruit is taken crop lightly. One or at most two bunches is as much as Vines in the first year of fruiting should be allowed to bear, but supernumeraries may be weighted with as much fruit as there is a prospect of their bringing to maturity.

The Kitchen Garden.

Asparagus.—Cold frosty weather greatly checked early growth, especially where no protection was given. The tender young shoots are often spoilt by frost, when this might have been prevented by hovering strawy litter over the beds every evening, and removing it in the morning of sunny days. If leaf soil is banked up round plants grown thinly on the level, this both protects and blanches the shoots, adding apparently to their value. Enough salt to quite whiten the surface of the beds acts as a good manure, and further serves to keep down slugs and weeds. In the case of heavy clayey soils it is well to omit this dressing of salt.

Planting and Sowing Asparagus.—Planting is best done in warm, dull weather. After the top growth has commenced is a good time to transplant Asparagus, and two-year-old plants receive less check in removal than do those older. Beds ought to be prepared in advance of the planting time. Those 5 feet wide are most often met with. In these the plants are disposed in three rows, the outside ones being 1 foot from the edges. A distance of 18 inches apart is not much to allow between the plants. Prepare a small mound for each plant, distributing the roots evenly round this, and covering the crowns with fully 3 inches of fine well prepared soil. On the level the plants may be put out 2 feet or more apart each way. Seeds may be sown immediately that the ground is in a fit state.

Seakale.—Late unforced but well blanched Seakale will be in great demand this spring owing to the scarcity of green vegetables. In many cases the old stems have been allowed to grow so tall that covering sufficiently with ashes, leaf mould, or ordinary soil is somewhat difficult. This difficulty may be obviated another season by cutting down the long stems close to the ground, doing this after they have had their blanched or unblanched top once or twice cut off for use. Seeds may be sown thinly in drills 1 foot apart, and the seedlings, if the soil is moderately rich and free working, will attain a fairly large size by the autumn. The better method of propagation, however, is by root cuttings, these being either started in boxes of sand or soil, and a gentle moist heat, or the cuttings may be inserted where the plants are to grow.

Rhubarb.—If litter is placed over the crowns to protect the advancing stalks from cold winds and frost, it should be hovered up occasionally, or it may do more harm than good. Plants that have been covered and forced ought not to be carelessly exposed to all weathers immediately after pulling has ceased. After removing the manure hover strawy litter over the plants for a time. Forced roots ought to

be given one season's rest. For ordinary purposes it is well to form fresh plantations occasionally. Just when the crowns are moving is the best time to do this. The old clumps may be divided freely, leaving one or more crowns to each division.

Herbs.—These ought not to be neglected. Those of a perennial nature pay well for lifting, dividing, and replanting in good fresh soil, while the annuals have also to be thought of at the present time. Sow seeds in boxes of Sweet Basil, Bush Basil, and Sweet Knotted Marjoram, and place in gentle heat to germinate, planting out the seedlings when large enough. Sow on a prepared border Borage thinly in drills 2 feet apart, and Fennel the same distance. Pot Marigold and pot Marjoram in drills 12 inches apart. Sow Chervil in drills 9 inches asunder, and Parsley in drills 12 inches apart. Early raised plants of the latter transplant readily. Divide and replant Mint, and also Chives.

THE BEE-KEEPER.

Seasonable Notes.

THE first three months of the year have not been favourable to bee-keepers. After the unsettled weather experienced during the early days of the new year we looked forward to bright sunny days such as were pretty frequent in March, 1899. But again disappointment has to be chronicled, as with little exception it has been dull and cold; the wind was in a cold quarter all this time. What has been the effect? On those days when the bees were tempted to leave their hive they rapidly became chilled, and many were lost. The prevalence of a low temperature at this season is most trying to the bees; as they are unable to fly far from home they often alight on the cold soil, which is fatal to them.

It is of the utmost importance that the bees should now receive the necessary attention to keep them in good condition; warmth is absolutely essential, and feeding must not be neglected. The treatment the bees receive during the next two months will make all the difference between success and failure. Stores have disappeared at a rapid rate. It is surprising how long a cluster of bees will keep alive when in a state of stupor at this season, although only a few ounces of stores remained in the hive. Whilst examining several colonies in frame hives recently one was found completely without stores. The bees appeared to be almost lifeless, many of them falling on to the floor board. We at once covered them up and warmed a couple of bricks, which were placed on the top of the frames, the quilt and a couple of pieces of carpet being allowed to remain underneath. The bricks were covered up so as to retain the heat as long as possible. Some warm syrup was in the meantime prepared in case it should be required. In half an hour the stock was again examined, when at least two-thirds of the bees were found to be alive. A bottle feeder filled with warm syrup was placed over the cluster and some more warm bricks. These had the effect of keeping up the temperature of the hive, enabling the bees to take the syrup freely.

Feeding Bees.

It is better to err on the side of safety by feeding the bees when they have ample stores in their hive, than to neglect those that are probably on the point of starvation and not feed at all. Feed all the stocks at this season, as the weather has been so trying throughout the early spring, rather than overhaul the frames and lower the temperature of the hive. Directly the weather becomes more genial all this can be counteracted by uncapping the stores of those which have it in this condition. This uncapping of stores has the same effect on the bees as feeding, as they at once commence to empty the cells and place the contents in various parts of the hive where it may be required. It is advisable to uncap about two square inches of comb every third or fourth day. If artificial feeding is necessary warm syrup may be used, as a favourable change in the weather may now be expected at any time.

Another great advantage is derived by uncapping the sealed stores in a hive, a much greater space being provided for the queen to deposit her eggs. This fact is too often not taken into consideration. We have found stocks on which sections were worked the previous year to have several combs of sealed stores at this season. If steps were not taken to remove some of the frames and uncap the others, the bees would probably swarm before the hive was half full of bees, owing to the combs being clogged with honey. We have often experienced this in our own apiary. Stocks that have been doubled and the honey extracted from the top storey are usually found to require much more feeding than those used for securing a crop of comb honey; in fact it is rarely the latter require any feeding at all. This fact should be taken into consideration when arranging for run or comb honey. A greater weight of honey can usually be obtained by extracting, which in many districts finds a readier market than honey in the comb.—AN ENGLISH BEE-KEEPER.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Vine in a Greenhouse (E. H.).—You will find your question answered in the form of an article on page 292. If the instructions given therein are followed the results are practically sure to be entirely satisfactory.

Grafting Paradise Stocks (G. C. F.).—The stocks having been planted at the beginning of the year will not start into growth so early as those which have not been moved, and should not be worked until the sap flows more freely—say at the end of this month or early in April. It may be done when the buds commence breaking, taking care to keep the scions quite dormant, as they will by inserting in damp soil or sand on the north side of a wall or fence. Whip grafting is the best method for small stocks, and it can be practised on much smaller stocks than crown grafting. The grafts should be inserted about 6 inches from the soil, as it is necessary the trees have a clear stem above the ground to derive the benefit of the stock. Cover the joint with grafting wax after securing the scion with bast.

Vines Unsatisfactory (M. A.).—The specimens of leaves and bunches are very unsatisfactory, the former being small and thin in texture, though quite clean and healthy, and the latter are stunted and in some cases shrivelled. Of Alicante and Gros Colman you may secure some fruit this season, but of Muscat of Alexandria and Madresfield Court the prospects are extremely uncertain. The cause is usually an unsatisfactory condition at the roots, not in your case at present, as the borders both inside and outside have been renovated, but to the bad state in the previous year. The renewal of the inside border two years ago would only affect the roots there, which were, no doubt, as commonly happens, few, the main portion of them being in the outside border. As the roots have not, as we take it, been active in the new inside border, the supplies of nourishment have been mainly furnished by the outside one, which, in an unsatisfactory state, has led up to the present condition of the Vines. Now that you have renewed the outside, we consider you may look forward to next year with confidence, although we do not approve of adding so much freshly slaked lime as half a barrowload to ten barrowloads of loam, and using the mixture at once. Had the lime been air-slaked the case would probably been different, and this is the only thing in which you have acted, if at all, wrongly. The other ingredients are all good. We should maintain a rather high and somewhat dry, but not arid, atmosphere for a time, and thus strive to draw out the bunches, say a night temperature of 60° to 65°, and 70° to 75° by day, ventilating moderately from the latter figure, and running up to 85° or 90° from sun heat. Encourage the extension of the shoots, these being allowed to extend beyond the bunches after the first stopping of the bearing growths at two or three joints beyond the show for fruit as space admits, but pinching those below the bunches to one joint, and the sub-laterals also to one leaf as made. In no case, however, allow growths to be made that cannot have full exposure to light, and not allowing the laterals to encroach on the free exposure of the principal leaves. With these matters duly attended to, and not making the borders too wet at any time, especially after the growth is properly developed, well-ripened wood may be looked for, and with it, and not too close pruning, a satisfactory condition of the Vines and Grapes another year.

Hens Eating Lucerne (Heathfield).—Lucerne is not in any way bad for fowls, though when the hens have been penned for a considerable time and fed on cereals—meal, wheat, barley, and maize—exclusively, they naturally are extremely eager for green food. In such case the fowls may at first eat more than is apparently good for them, as green food in excess induces looseness, but only of a temporary character, for the fowls soon return to a judicious proportion of the greenstuff, having overcome the craving for cooling food promoted by the heating properties of the hard food—meal and grain.

Cypripedium bellatulum (J. C. S.).—It is by no means certain that this handsome Orchid would flourish in an ordinary greenhouse. The atmospheric conditions of such a structure are usually very different from those that prevail in cool Orchid houses. Then it must be borne in mind that Mr. W. H. Young, who was referred to on page 261 as growing this *Cypripedium* in a cool structure, is one of the most expert Orchid cultivators we have, and would therefore be much more likely to succeed than anyone who is comparatively inexperienced. We will endeavour to get Mr. Young's personal opinion for you, and give his reply in as early an issue as possible.

Climbing French Beans (W. M.).—Undoubtedly there is a climbing French Bean, and a most useful plant it is. It may be briefly described as combining the cropping properties of the Scarlet Runner with the tenderness and flavour of the dwarf French Bean. We do not quite take your meaning in respect of "prosaic" mould. If by this you mean poor unworked soil, then we can say that neither this nor any other Bean will flourish successfully in it. If, on the other hand, you wish to convey the idea of an ordinary garden soil, thoroughly worked, and well enriched with manure, then we have no hesitation in saying that the climbing French Bean will, other details of management being proper, grow and crop in a most satisfactory manner. The height to which the plants attain varies with the soil and season. We have seen many rows only 4 feet high, and several as tall as 8 feet. You might take 6 feet as the average. Sutton's Tender and True is an excellent variety. Of course you will understand that the plant partakes of the tenderness of Kidney Beans, and must therefore not be sown early.

Dendrobiums after Flowering (W. Raby).—Plants that have flowered must be watered with great care. Injury often results in their present stage from giving them too much water. The roots of many are still inactive, and if they are kept in a wet state numbers are certain to perish. The reason many *Dendrobiums* decline in health after the first or second season is frequently owing to keeping them in a saturated condition as soon as flowering is over and the plants commence growing. They need little water at first, a slight dewing with the syringe being ample in a moist atmosphere until the formation of new roots. As the roots and growth extend the supply of water should be increased. Plants would last longer and increase in strength if greater care was exercised during the early stages, and again after the completion of growth. When *D. nobile* starts into growth it often pushes freely from the pseudo-bulb. If these are not wanted for stock they should be removed, for they have a tendency to rob the growths that issue from the base. This old but very useful Orchid delights in a moist atmosphere.

Thunbergias in Boxes (Tyro).—*Thunbergias* would succeed well if planted out in a well-drained box in a greenhouse. Sow the seed thinly in a well drained 5-inch pot filled with equal parts of leaf soil and loam, with a good sprinkling of silver sand; make the surface level sow the seed thinly, and barely cover with fine soil. Place a covering of light, damp moss on the surface, which will counteract the drying of the surface. Place the pot under a close hand-light or bell-glass in the greenhouse, and let it be kept shaded. As the seedlings appear remove the moss, and ventilate and water with care. After the seedlings are large enough to handle pot them singly in 2-inch pots, and when established in these repot into 5-inch pots. The soil at this repotting should consist of three parts turfy loam to one each of leaf soil and well pulverised manure, with a little sand. As the plants become well rooted they must not be allowed to suffer for water, and be syringed thoroughly on fine afternoons to keep down red spider, which is their greatest enemy. After the plants become well established plant out in the boxes.

Preparing Pasture Land (C. H. R.).—The ground should be trenched as deeply as the good soil will allow, but do not bury the turf more than 9 inches deep, and do not bring much of the stiff, stubborn sub-soil to the surface; a little may be brought up and the other loosened to a depth of a foot and left at the bottom. The ground after trenching should have a good dressing of decayed stable manure, and if you can command some charred refuse it would prove a most excellent dressing, as also would ashes and mortar rubbish from an old building, spreading them on the surface evenly and forking them in, but not so deeply as to disturb the turf and bring the grassy part up, as they would no doubt grow and give considerable trouble through the summer. We should crop the ground you intended planting with fruit trees with Potatoes and other vegetables that will be off by autumn. If the ground is then stirred deeply and manured it will be in good condition for planting with fruit trees. Without a sketch of the ground and the method in which you propose to lay it out, and how much you wish to devote to each crop, we could not advise you in respect of what to plant.

Vines and Manure (E. J. C.).—Basic slag was recommended for Vines as a source of phosphoric acid yielded slowly to the soil, and also for its free lime. We have no recollection, however, of advising sulphate of ammonia to be applied with basic slag, and hardly think we have done so, unless the case was an exceptional one, and of which you give no data. Replying to your present questions:—1, The dose of basic slag should not be repeated during the growing season, as the phosphoric acid will come too slowly to profit the Vines. Quicker acting substances should be used, the following being more to the purpose for feeding during growth—bone superphosphate, dry and crumbling, three parts; powdered saltpetre, two parts; and ground gypsum, one part, mixed, applying 4 ozs. per square yard when the Vines are started or commencing to grow, again when the Grapes are thinned, and again when the stoning is completed and the berries are beginning their first swelling. This, with the "pump sewage," should give excellent results. 2, The Peaches and Nectarines that have been dressed with basic slag the same as the Vines may be treated in a similar manner with the fertiliser named, but it is not advisable to stimulate the trees much in the early stages of the fruit swelling, or until they have stoned, as nitrogenous food favours wood rather than fruit growth. The mixture may be applied at starting the trees, or when the buds commence swelling; after the fruit has been thinned for the stoning, or just before this begins; and when the stoning is completed, the fruit then taking its last swelling for ripening.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. J. W.).—1, 2, and 4, all forms of *Odontoglossum crispum*, and not one of them is over the average of merit; 3, *O. gloriosum*; 5, *O. Edwardi*. (Amateur).—1, *Sedum Sieboldi*; 2, *Sempervivum tectorum*; 3, *Diplacus* (*Mimulus*) *glutinosus*; 4, *Allium neapolitanum*. (C. G. A.).—1, *Daphne Mezereum*; 2, *Akebia quinata*; 3, *Abutilon vexillarium variegatum*; 4, *Asplenium Ruta muraria*; 5, *Cyrtomium falcatum*; 6, *Polypodium aureum*.

Names of Fruits (H. U. R.).—No. 1 closely resembles the Red Winter Calville. No. 2 is suggestive of small fruits of Small's Admirable, but are so much bruised as to preclude certain identification. It is possible that both varieties are local seedlings, of which there are many in your county.

Covent Garden Market.—April 4th.

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Lettuce, doz. ...	0 10	to 1 2
Asparagus, green, bundle ...	5 0	5 9	Mushrooms, lb. ...	0 8	0 10
" giant, bundle ...	15 0	20 0	Mustard and Cress, punnet ...	0 2	0 0
Beans, Jersey, per lb. ...	2 0	2 6	Onions, bag, about 1 cwt. ...	4 0	8 0
" Madeira, basket ...	2 6	3 6	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz. ...	0 6	0 0	Potatoes, cwt. ...	3 6	6 0
Brussels Sprouts, $\frac{1}{2}$ sieve ...	1 6	2 0	" Teneriffe, cwt. ...	18 0	28 0
Cabbages, per tally ...	9 0	12 0	Radishes, Jersey, long, doz. ...	0 8	0 10
Carrots, per doz. ...	3 0	4 0	" French, round, doz. ...	1 6	0 0
Cauliflowers, doz. ...	3 0	4 0	Seakale, doz. baskets ...	15 0	18 0
Celery, per bundle ...	1 0	1 9	Shallots, lb. ...	0 3	0 0
Cucumbers, doz. ...	4 0	8 0	Spinach, per bushel ...	3 0	5 0
Endive, doz. ...	1 6	2 0	Sprue, French, per doz. ...	9 0	10 0
Herbs, bunch ...	0 2	0 0	Tomatoes, per doz. lbs. ...	4 6	5 6
Leeks, bunch ...	0 3	0 0	Turnips, bunch ...	4 0	6 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ferns, small, 100 ...	4 0	to 8 0
Arbor Vitæ, var., doz. ...	6 0	36 0	Ficus elastica, each ...	1 6	7 6
Arums, per doz. ...	6 0	8 0	Foliage plants, var., each ...	1 0	5 0
Aspidistra, doz. ...	18 0	36 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, specimen ...	15 0	20 0	Lily of Valley, per pot ...	1 0	2 0
Boronia, doz. ...	20 0	24 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Ocotons, doz. ...	18 0	30 0	Hyacinths, Roman, per pot ...	0 8	1 0
Cyclamen, doz. ...	6 0	8 0	Lycopodiums, doz. ...	3 0	6 0
Daffodils, pot ...	0 6	1 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna, var., doz. ...	12 0	30 0	Mignonette, doz. ...	8 0	12 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz. ...	6 0	9 0
Erica various, doz. ...	8 0	18 0	Palms, in var., each ...	1 0	15 0
Euonymus, var., doz. ...	6 0	18 0	" specimens ...	21 0	63 0
Evergreens, var., doz. ...	4 0	18 0	Solanums per doz. ...	9 0	18 0
Ferns, var., doz. ...	4 0	18 0			

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve ...	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
" Californian, per case ...	8 0	14 0	Oranges, per case ...	5 0	15 0
" Nova Scotian, barrel ...	15 0	22 0	" Californian, seedless ...	16 0	24 0
Cobnuts per 100 lb. ...	80 0	90 0	Pears, Californian, case ...	6 0	9 0
Grapes, black ...	2 6	5 0	Pines, St. Michael's, each ...	1 0	6 0
" Muscat ...	4 0	8 0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches ...	2 0	to 3 0	Mimosa, per bunch ...	1 6	to 2 0
Arums ...	4 0	6 0	Mignonette, doz. bunches ...	3 0	5 0
Asparagus, Fern, bunch ...	2 0	2 6	Narcissus, white, doz. bun. ...	2 6	3 6
Bouvardia, bunch ...	0 6	0 9	" Yellow, doz. bunches ...	2 0	3 0
Carnations, 12 blooms ...	1 9	3 0	Odontoglossums ...	5 0	7 6
Cattleyas, per doz. ...	10 0	12 0	Pelargoniums, doz. bnchs ...	8 0	12 0
Daffodils, double, doz. bnch ...	6 0	8 0	Roses (indoor), doz. ...	6 0	8 0
" single, doz. bnch. ...	6 0	12 0	" Red, doz. ...	4 0	6 0
Eucharis, doz. ...	2 0	3 0	" Safrano, doz. ...	2 6	3 6
Gardenias, doz. ...	3 0	4 0	" Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz. ...	6 0	9 0	" Yellow, doz. (Perles) ...	5 0	7 6
Hyacinth, Roman, doz. ...	5 0	6 0	" Maréchal Niel, doz. ...	6 0	12 0
Lilium Harris, 12 blooms ...	6 0	8 0	" English (indoor):—		
" lancifolium album ...	3 6	4 6	" La France, doz. ...	6 0	12 0
" rubrum ...	3 6	4 6	" Mermets, doz. ...	3 0	6 0
" longiflorum, 12 blooms ...	8 0	10 0	Smilax, bunch ...	4 0	6 0
Lilac, white, bundle ...	4 0	6 0	Tulips, scarlet, bunch ...	0 6	0 8
" mauve, bundle ...	6 0	8 0	" yellow, bunch ...	1 0	1 6
Lily of the Valley, 12 bun. ...	6 0	18 0	" bronze, bunch ...	1 0	1 6
Maidenhair Fern, doz. bnch ...	8 0	10 0	Violets, Parma, bunch ...	3 0	4 0
Marguerites, doz. bnchs. ...	3 0	4 0	" dark, French, doz. ...	2 0	3 0
" Yellow, doz. bnchs. ...	4 0	6 0	" " English, doz. ...	2 0	3 0



Green Peas as a Field Crop.

THOUGH a large proportion of this year's crop of Green Peas is, as it should be, already in the ground, there is yet time to sow some of the midseason and later sorts. Farmers are very cautious folk, and are hardly persuaded to make ventures into unknown regions, but there are many farms so situated near to large centres of population and containing soil suitable for Pea growing, where a reasonable acreage of this vegetable might be made very productive and lucrative. We say reasonable acreage. We mean with a view to the supply of labour wherewith to pull the pods the moment they are ready for market. There is generally a good supply of suitable hands in and about large towns; catch-penny hands are generally on the look out for such work; women who will work may earn three or four shillings per day, and there is an attraction to townspeople in spending a few days in the fields. In fine weather women can take their families with them and camp out, as the hoppers do in Kent. Near a town a farmer might find it easier to market 20 or 30 acres of Peas than to market one from a remote village. Then there is the advantage of having his market near at hand, so that he can get a quick sale, which is desirable, for Peas are very perishable if kept long in masses.

Growers at a distance from their market sometimes have the mortification to find that their produce has not paid for pulling and railway expenses. We have known Peas to be condemned as unfit for food, and money having to be paid for carting them away. The cause was heating from being too long in bags without removal. In other cases salesmen have to take 1s. or 1s. 6d. per cwt. for produce so as to get them removed before worse happens. The farmer who is independent of the railway, and can cart his Peas in direct, must thus have a great pull over those at a distance.

We have shown the dark side of Pea growing, now we must show the bright. We have known a crop of 6 tons per acre, and another case where 100 bags (of 8 pecks) per acre were sold, commencing at 14s. per bag and finishing at 6s., the average being about 9s., or £45 per acre. This was a 10 acre plot, and if there had been a sufficient

supply of labour none would have made less than 10s. per bag, for they were all ready at once. It is obvious, therefore, that it is unwise to have too many eggs in one basket—i.e., too many Peas ready at once. Three or four varieties coming in succession are better than one sown at different periods, for there will be more difference in the various times of maturity, and so the pulling season will be prolonged, labour will be made the most of, and although price may at first sight seem likely to suffer, the loss will be more imaginary than real, for quality should increase with the later season, midseason and late Peas being as a rule the best. The labour of preparation is more easily managed than that of harvesting, for in Pea growing districts, and taking large acreages, nearly all the work is done with the horse. The crop is generally grown after Barley, and in place of seeds. This is often done on light and dry land as a necessity owing to the Clover plant being a failure and not worth keeping further to graze or mow.

The land having been well worked and cleaned in the autumn, is manured and the manure ploughed in when convenient; on light soils this work may be put off, but on heavy or strong loam earlier ploughing must be resorted to so as to insure a greater probability of a good frost mould. The ploughing having been done with ordinary ploughs, a 9-inch seam would be the rule, and no better plan can be followed afterwards than to use the same plough and ridge the land up, taking the plough down alternate seams, so making the ridges 18 inches in width. The seed should be sown by hand in the furrows, and the operation may be best described as a rough sort of dibbling, or much as a gardener sows his garden Peas. Any top-dressing should be put on now, if at all. On light soil 1 cwt. nitrate of soda, and on any soil 3 cwt. superphosphate will be of material benefit.

The ridges should now be split, covering in both seed and manures. A casual observer might think that Peas sown thus would come up too broadcast, but such is not the case, as they are almost all in rows, and very few are disturbed by the skerrying which so soon and so necessarily follows; for to grow Peas well means to grow weeds well. The ridging defines the position of the rows of Peas so well that a horse hoe set narrow may be run between the rows before the Peas actually appear, and the sprouting weeds killed before they are troublesome. The greater exposure of soil to the influence of air and sun is an advantage, as well as the more complete burying of the seed out of the reach of predatory birds. Peas at 5s. to 10s. per peck are too costly to feed birds with.

The varieties recommended by practical Pea growers are Eclipse and William I. as earlies, but the latter is very dwarf, and is only suitable to good land in the best of condition. Telegraph is a very good midseason Pea, and stands marketing well. Duke of Albany is a little late, but the quality is splendid; nothing can beat this Pea on the market. Duke of York is a newer kind, and is likely to make a permanent name for itself. All the above are good standard varieties, and suitable for growing in the field without rods. Tall-growing Peas, like Ne Plus Ultra, are of no use for such cultivation. The space between the rows must be kept stirred with the hoe until it cannot be done without damage to the young growth.

As it would be impossible to gather field Peas in the same way that garden Peas are pulled from the rodded rows—i.e., by selecting the pods as they become fit, and leaving the rest to mature further; field Peas are pulled up by the roots, all the marketable pods stripped from them, and the straw put in heaps to dry before being carted into a stack.

Work on the Home Farm.

More stormy weather with heavy snow showers and more delay in farm work! Instead of making up the arrears they are perforce still accumulating. The worst aspect of the situation arises from the fact that the young generation of farm labourers are so much less inclined to make a push when work is backward than their fathers were. Many farmers give a rise of wages to their daily labourers on March 1st, when it becomes light enough to work from 6 to 6; but they are able to make the stipulation that such shall be the hours. It is too often the custom for the men to leave home at 6 A.M., the time occupied by the journey to the farm being included in the working hours. Unless the men all live close together this results in their dropping in at intervals, and means that little or no work will be done

until all arrive. Unless the men can be got on the ground at 6 it is much better to allow a specified time—say fifteen minutes—for the journey, and have all in the yard together. The same applies with even greater force to the time of leaving. With north winds, frost and snow there is hardly any spring growth, even where the land is not stocked; but with no Turnips farmers have been obliged to stock their seeds with ewes and lambs, and being short of plant to begin with the fields are now quite bare. Mangold has to be given, and what with the ewes and the cows the Mangold heap is fast shrinking to an end. We are hoping for warm weather soon, otherwise we shall be indeed in evil case.

It is advisable to dock the lambs' tails now, as there is danger if they get too strong. As soon as they are strong enough to stop out at night they may be docked, and there is less danger in cool weather.

We see a good many cattle out at grass now, but cannot see much economy in turning out yet, for straw is cheap, and much more plentiful than the grass, which has greater value just now for sheep. Some farmers like to get their cattle out early and hardened off, as there is an idea that they begin to thrive sooner and better if they have to watch the grass growing; but it will be a rough experience for them to be out now unless they have very rough coats. Of course they may be, and in most cases are, brought up at night; but they will be difficult to tempt with anything worse than hay or cake. Cut straw will need very highly flavouring to tempt them after they have had a few mouthfuls of grass.

A NEW ZEALAND BUTTER LAW.—In New Zealand they have a law which says, "In every case where dairy produce is condemned by an inspector he shall, at the cost and expense of the owner, cause the same to be removed to boiling down works, soap works, or other place where such produce shall be so treated as to be absolutely unfit for human consumption." If such a law was enacted in this country it would destroy the business of the "renovated butter" factories, and do more to help those who make good butter than all the oleo laws that have ever been passed. They evidently do not believe there that poor butter can be made good by washing it in acids, colouring it, and adding poisonous preservatives to it.—("American Agriculturist.")

WIRE FENCES.—The extraordinary demand for iron and steel products, and consequent high prices, is making wire fences cost much more than a few years ago, but we are not sure but they are even now the cheapest fences one can build, considering durability as well as first cost. Many use second-hand gas pipe for posts, and we think, says a transatlantic contemporary, there is nothing better if they can be bought direct from companies who take them up because of pinhole leaks that make them unfit for conveying gas, but in no way injure them for use as posts. They can be found in almost all sizes, from the inch pipe, large enough for the wire netting for poultry yards, up to a size that will carry a heavy wire for cattle fence, and if painted occasionally are neat and durable. They would help to remove a danger sometimes feared from wire fences, the conduction of lightning. The first iron post would be very likely to ground the current.

SAVING ROUGH FODDER.—A few years ago not many farmers in the corn-growing States thought of saving their corn-stover, though perhaps they turned cattle in among it to eat a little and tramp it down. Where small grain was grown the straw was thought to have very little food value, though some kept their stock half starved on it. Eastern farmers, who were thought to be very saving, seldom fed out bean straw or pea straw. Now all these are saved, and while they need more grain with them than does Clover or other good hay, it is thought economy to feed any or all of these, and by adding grain keep the animals in better condition at less cost than when hay is fed, and at the same time add to the value of the manure made on the farm. Many varieties of weeds also make good rough forage if mown down and cured before they have ripened their seeds, and to do so helps to keep the land clean, and preserve the fertility in it for more useful crops.—("American Agriculturist.")

MAIZE AS HOG FOOD.—It is not so common as it used to be, but the practice of feeding hogs on whole maize till they can hardly stand is still prevalent to a large extent. It is very wasteful of maize, and besides it makes pork that is not of the best quality, and will not sell in the markets for the highest prices. Nobody wants to eat lard, which is what such fat pork really is. This overfat pork does not waste so much in cooking as that from younger animals that have been fattened while the pig was given food that kept him growing. But this hardness of pork fat after maize feeding only shows that the animal has had fever which has dried the moisture out of the fat as fever does to all parts of the body. This overfat pork is unhealthy for delicate stomachs, and is especially bad for people who live sedentary lives. Only those working hard in the open air can, says a transatlantic contemporary, safely use it. Even the lard from overfat hogs is not so good. Since the superseding of lard by cottonseed oil, many people can eat pies and pastry made with fat who could not do so when the lard of overfat hogs was used. In olden times the fat in a hog made him sell better, as it could be tried out and sold as lard, which always brought a higher price. Now the lean hogs, with only fat enough to cook it with, bring a higher price than hogs whose bodies, except the bones, could nearly all be rendered into lard.

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Journal of Horticulture.

THURSDAY, APRIL 12, 1900.

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The Call of Duty.

ANY gardeners there are who regard the month of April as the commencement of a new year—at any rate to them it is the threshold of an era of unexampled activity of mind as well as of body. Garden plans are sometimes sketched out with April and March as the beginning and the ending, and provided such plans are skilfully made no better coigns of vantage could be chosen. Though the gardener's life is essentially a busy one, the easiest period, broadly speaking, is in the depth of winter, and even as all Nature springs into life beneath the gentle touch of spring, so must the practiser of the oldest art come forth into renewed life ready for the incessant calls that will be made upon his energies during the coming days.

It is the call of duty. And every gardener responds. We hear much of the call of duty in the navy and the army, and we read of the enthusiastic response to the country's call; but in our home life duty calls just as sternly and as persistently, and few are the laggards. Certain it is that with gardeners the man who is slow to toe the line is the one who fails—he misses the seed-time and he misses the harvest. No one who wields a pen needs to urge the gardener to do his duty to the garden in his charge, and it is pleasant to know that such is the case. There are the black sheep of the craft no doubt, but they are not numerous, and perhaps they answer a useful purpose in showing the devotion of others to their chosen avocation.

There is, however, a call of duty to which the gardener does not lend such a ready ear, and it is to incite them to this that the present words are written. The particular duty to which reference is made is that which endeavours to make some preparation for the days when the hand trembles and the eye becomes dim with the mist of years. This period must come to us all, and it behoves us to make due provision. True some of us must pass away ere yet the hand of time has put a line

of silver in our hair, but still the duty is the same, for we must do what we can for those who remain behind. The duty then lies to all intents and purposes in insurance—not necessarily in some vast insurance corporation, but in such a society as the Gardeners' Royal Benevolent Institution, which is far better, because it was formed and is maintained with only one object in view, and that is to benefit gardeners.

A season such as the present is one which does not come frequently in the history of our land. It is a season of war, and war inevitably enhances prices and increases the cost of living for everybody. The invariable tendency of such a condition of affairs is to cause a great diminution in the amount of charitable offerings, and it is not to be supposed that gardening charities will be exempt from the prejudicial influences now reigning. Hence it is desirable that both the amateur and professional horticulturists should seriously consider the necessity of making some special effort, in order that the Gardeners' Royal Benevolent Institution may suffer no serious misfortune of war in this spring of 1900 A.D. Owing to the energetic management of recent years and the greater publicity given to its operations, the Institution has progressed marvellously. With continued publicity it is reasonable to expect that its fortunes may at least be maintained at their present high level. This object, however, is only likely to be secured by a great collective effort and a keen realisation of the merits of the cause.

Now, can anyone point to another institution that gives the gardener such an excellent percentage on his investment? There are no shareholders here, no board of directors, and no splendidly fitted buildings, all of which are constantly crying out for more money with an appetite that is insatiable. Instead of these things what do we find? A committee of earnest men whose sole endeavours are to do the greatest amount of good with the funds in their hands, a secretary who is a worker and not a mere figurehead, and an office of two rooms. Could anything be more economical than this? Surely such an institution finds the support of every gardener! But no, this is not the case.

The response of the gardener to this call of duty is meagre indeed, it might almost be called a disgrace to our noble calling. What, it may be asked, is the cause of this? The reply must be sheer apathy and indifference. Men will not allow themselves to be roused in such a cause; they make no effort, but let things slide. Some of them say they will never require a pension. But are they sure? Have they an annuity that cannot fail? Others say they have a chance of the pension whether they subscribe or not. This is true, but they are eating the bread of charity, and this, to an independent man, is not always sweet. A third class asserts that as the management is in London metropolitan gardeners are the first recipients. This is pure nonsense, as the election is by ballot of subscribers all over the country.

During the past few years inestimable good has been done by the establishment of provincial auxiliaries, but these are not sufficiently numerous. Here again we find a number of devoted men, working strenuously to benefit the general gardening community. They seek no recompense for their labours—indeed, if the truth were known, it would probably reveal the fact that they were decidedly out of pocket over and above their annual subscriptions. From whatever point of view the work of the Gardeners' Royal Benevolent Institution be regarded, it is found that it is to benefit gardeners or their widows; and the more the affairs of the society are looked into, the greater will be the admiration of all thinking men. There may be some men who cannot see the good that has been, is being, and will be done; but these are purposely blind, and are rather to be pitied than condemned.

The most serious objection that any gardener can bring forward is that he cannot afford to subscribe. It has been heard many and many a time, but is it true? Everyone who is intimate with the inner workings of the craft knows that the gardener is not "made of money!" He has frequently many demands on an already slender purse. Should this, however, prevent his adding his mite to an excellent cause? By no means. Surely a little could be spared to be handed over to swell the all too limited funds of the society. What the amount should be must of course be a matter for individual decision, but it may be borne in mind that the nimble sixpence laid by weekly means twenty-six shillings at the end of the year.

"Too much" some will say; very well, reduce it by one half—three pence per week—which cannot well be deemed extravagant.

Let us make a little estimate of what the amount would be if one half of the gardeners of the United Kingdom subscribed to the funds of the Gardeners' Royal Benevolent Institution the sum of 13s. each per annum. To do this we must first ascertain how many gardeners there are, and to this end we will make use for a moment of the "Horticultural Directory." This book does not embody all the gardeners by several thousands, but it will do for the object in view. To the alphabetical list of gardeners we find eighty-eight pages devoted, and estimating each of these pages to contain eighty names and addresses we get a grand total of 7040. Supposing each of these subscribed the suggested 13s., the amount would be £4576—a handsome sum indeed, but not too large for the committee to employ to the general benefit of the craft. Doubtless there are three times the number of gardeners, so that the estimate cannot be termed an unreasonable one.

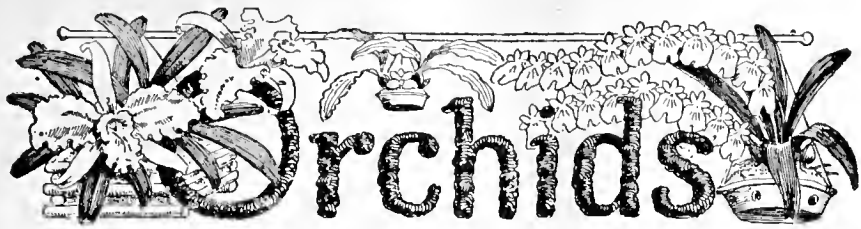
Gardeners of Great Britain and Ireland are called upon to think of these things. Let them ponder deeply over the figures given in the preceding paragraph, and decide to answer to this call of duty. If they do not care to send their mite to headquarters, they must seek the nearest auxiliary and place their subscriptions in its hands. There may not be a convenient auxiliary, but one can soon be formed if a score or more of determined men set themselves to the task; they can always get valuable assistance to such ends as these from Mr. Ingram, 175, Victoria Street, London. Those men who come forward now can rest assured that they could not work for a better cause—a cause of which, though they, personally, may never have the need, hundreds of their brethren of the craft will participate in and receive benefit from in the years that are to come. Gardeners, duty calls you—the noblest duty of all, for it is that which extends the hand of assistance to others in distress. Who will not answer to the call?—A. B.

The Queen in Ireland.

FLORAL decorations played, perhaps, only a minor part in the magnificent reception given to our Queen by the Green Islanders on Wednesday last (April 4th), when her Majesty after long years came back to Erin, and it is a question whether they were sufficiently in evidence to warrant a note for the *Journal of Horticulture*. They may, however, serve as an excuse to voice in its pages the depth of feeling which now permeates the Milesian metropolis. Ah! You "can read it all in the papers, and do not want a gardener's description;" he could never do justice to that wild wave of enthusiasm which accompanied the Queen along "the rocky road to Dublin," where my Lord Mayor, with ancient pomp and pageantry, admitted her Majesty by the finest piece of decorative work of all—viz., a reproduction of the old city gates.

Really floral decorations, when one comes to think of it, were almost conspicuous by their absence, yet not wholly so. Here and there, at rare intervals indeed, some simple decoration in which evergreens were a prominent feature formed a pleasant relief to the thousands of flags which fluttered o'er the ten mile route. The more we were beflagged the more we missed that one touch of nature which would have harmonised so well with the bravery of bunting—viz., evergreens. Little compensation was to be found in the costly floral arch in which Booterstown displayed its ingenuity and expressed its loyalty, for although the most elaborate thing of its kind, the bulk of the flowers of which it was composed were of the "papyrus crinklum" variety, Mr. Carroll adorned the unpretentious entrance to Dornden, over whose garden he presides, by a happy blending of nature with art, in the use of evergreens tastefully draped about the old Irish motto, *cead mile failte* worked in white letters on a red ground. Evergreens, certainly, are not, strictly speaking, floral decorations, but in no instance could their importance as decorative subjects have been better shown than in the examples seen.

It is reported that on landing at Kingstown her Majesty expressed a wish for some Shamrock to wear, which was immediately supplied from the sward outside the landing place. We did not notice the emblem in the excellent view of our Queen as she drove by, but saw in the carriage beside her a charming bouquet of Callas and Lily of the Valley which had been presented at the pier. A silver basket filled with Roses, Orchids, and Ferns was further presented by the Lady Mayoress at the gate of the, then, most beflagged city of the Empire. As for the weather, which as much concerns our Journal readers as it was a matter of concern to Dublin that day, with the exception of a slight shower it was perfect, and in striking contrast to the day previous, when hopes went to zero, and although a north wind cooled the bright sun rays, it was fully atoned for by the warm Irish welcome accorded to our Queen, God bless her.—K.

*Odontoglossum triumphans.*

WITH the immense strides that have been made in the *Odontoglossum* family during late years it would be a matter for surprise if the handsome *O. triumphans* had not come in for a goodly share of attention. This extraordinary advance in quality is owing largely to the efforts of hybridists, and again to the very much improved methods of culture that are now adopted. The latter has meant that excellent introductions, which in earlier Orchid days were practically spoiled by bad cultivation, are now improved under the fostering and intelligent care that is devoted to them. Not only are the flowers finer in themselves, but better qualities are, so to speak, forced from them by rational treatment in the hands of experts. This theory of improvement by cultivation is admirably illustrated in *Odontoglossum triumphans*, of which the earlier forms were small in size, narrow in the sepals and petals, and thin in texture as compared with the splendid types of the present day.

Amongst those who have been instrumental in bringing forward marked developments in *O. triumphans* must be named Mr. de Barri-Crawshay of Rosefield, Sevenoaks. This enthusiastic amateur derives the greatest possible amount of enjoyment from his hobby, and at frequent intervals brings the fruits of his labour of love to the meetings of the Royal Horticultural Society at the Drill Hall. In April of 1895 *O. triumphans* Lionel Crawshay was exhibited, and was stamped with the hall mark of excellence by the receipt of a first-class certificate. This variety is magnificent in all respects. The flowers are large and very rich in colour. The sepals are clear yellow, with a bright brown patch and yellow margin, the petals, which are broad and of great substance, being of the same rich colour. The lip has a yellow fimbriated margin, with a broad reddish brown patch and a canary yellow throat. Though five years have elapsed this variety still maintains its position in the front rank of *O. triumphans*.

Now it is to have a worthy companion in *O. t.* Raymond Crawshay, and the brothers may be congratulated upon their namesakes. As better indication of their excellence, we give in fig. 82 a representation

FIG. 82.—*ODONTOGLOSSUM TRIUMPHANS* LIONEL CRAWSHAY.

of *O. t.* Lionel Crawshay, and in fig. 83 one of *O. t.* Raymond Crawshay. The newcomer was exhibited by Mr. Crawshay before the Orchid Committee of the R.H.S. on March 27th last, and that body

showed its appreciation by the recommendation of an award of merit. It is indeed a superb flower, as well in substance and size as in form and colour. It is fully 3½ inches across, and the golden yellow colour is practically obscured by the varnished brown. In the fine petals there is rather more yellow observable, but the brown is equally as pronounced. The lip, too, as may be seen by glancing at the illustration, is very beautiful. We have now only to wait for Mr. Crawshay's third form to complete a perfect trio.

Angræcum (Aeranthus) Leonis.

On the occasion of a recent visit to Clare Lawn I was delighted to find this beautiful Orchid in flower, and should like to know why it is apparently accorded such a meagre share of attention. Whether it finds a place in all collections or not I cannot say, but I do know that it is comparatively seldom I have seen it in flower. If its culture

FIG. 83.—*ODONTOGLOSSUM TRIUMPHANS* RAYMOND CRAWSHAY.

presents certain difficulties, these are not apparent at Clare Lawn, where it was flowering most satisfactorily. The habit of the plant (fig. 84, page 303) is very dwarf, the leathery leaves being about 6 inches long and sword-shaped; the spikes carry from two to six flowers, which are ivory white in colour. *Angræcum* or *Aeranthus* Leonis was discovered by Mons. Leon Humbolt in the Comoro Islands about fifteen years ago, and it may be grown in the warm or East Indian house in baskets of sphagnum moss.—VISITOR.

Masdevallia leontoglossa.

Few will deny the beauty of this *Masdevallia*, and yet it is not a showy plant. From a tuft of leaves about 6 inches high the flower spikes are thrown up, each blossom being greenish-yellow with purple markings, a rather unusual combination. The specific name is given on account of the supposed resemblance of the sepals to a lion's tongue. It should be accorded a position with the warmer section of the genus, such as *M. Chimæra*, at least during the winter months. In summer it can hardly be kept too cool, being a native of Venezuela.

Lælia cinnabarina.

There are very few brighter or more beautiful Orchids in cultivation than this, its brilliant red blossoms being plentifully produced on the spreading spikes. Its fine colour has led hybridists to use it freely as a parent, but beautiful as are some of its progeny, none is really so effective. It likes a light position in the Cattleya house, and should not be disturbed at the roots oftener than is really necessary. Ample moisture is required when growth is active. A native of Minas Geraes, it was introduced in 1836, and flowered for the first time in this country in a Surrey nursery the year after.—H. R. R.

Seeds and Seed Sowing.

THE month of April may, to a certain extent, be regarded as the commencement of the gardening year, as it is in this month that an immense amount of work has to be carried out. In no section of the craft is this more emphasised than in the department for sowing seeds of various kinds with a view to raising flowering plants or vegetables for the adornment of one position, and the stocking with utilitarian products of another. There can be no doubt that good seeds of the best kinds with timely and careful sowing contribute very materially to successful culture. The good seeds are to be obtained with a tolerable degree of certainty from every respectable seedsman, but the sowing is unfortunately only too often so badly done that failure is inevitable. Many and repeated failures have taught me how to exercise the necessary caution and care to insure success; I have been several years learning the lesson. Other persons may be better able to steer clear of rocks and shoals than I have done, but mistakes occur so easily that a danger signal or two cannot prove other than useful.

Neither a close heavy soil, nor a light poor soil, is a suitable medium for the vegetation of seeds. Enrich both by repeated heavy dressings of manure and leaf mould, and render them open and free by an abundant admixture of some hard, gritty substance, such as stone chippings, shattered brick, or, best of all, coal ashes; then by digging in autumn and exposing as much as possible to the action of frost, you will find the ground in readiness for the seeds on the first fine day in spring. This is a thorough and efficient method, preferable to any other, but unfortunately it is not always practicable, makeshifts having to be resorted to in many instances, and when such is the case "little and good" rather than "much and bad" should be our motto. Instead of scattering broadcast such few fertilisers as our limited means can command, we must concentrate them in drills, trenches, and stations, so as to have the requisite amount of nourishment within reach of the earliest roots which spring from the seed as it vegetates.

Take, for example, a row of Peas. Now the Pea is a deep-rooting gross feeder, with a free, quick, succulent growth: why, to sow the seed of such a vegetable in a poor, inert soil, is ridiculous—it is sheer waste, and it is quite certain to cause vexatious disappointment, and yet there can be no doubt about its being done season after season. Whereas we have only to make a trench a foot deep and wide, laying the excavated soil along the sides, replacing about two-thirds of it with manure, leaf mould, or other decayed vegetable matter, or in fact any substance which appears to us to be sufficiently nutritious for the purpose, then mixing enough of the displaced soil with it to fill the trench. We next draw a deep drill along the centre, deeper than is absolutely necessary for the seed, which is much too precious to be left to take its chance in such a rough mixture; so we look about us for some old leaf mould, wood or coal ashes, fine charcoal, shattered brick or stone siftings, making the best mixture of any of these we can find, scattering an inch or two of it along the bottom and sides of the drill; then comes the seed with a covering of the same fine gritty substance pressed gently down with a spade, and the work is done so well that we may feel certain vegetation, and a free robust growth, will promptly ensue. We have thus laid the foundation of success, but we must not forget the risk which the seed runs of spoliation from mice and birds.

I am not afraid of the ravages of snails in such a quick, free soil; it is in a cold, heavy, inert soil, that they do so much harm. There are some favoured spots where mice and sparrows are so scarce as to be comparatively harmless, but in most gardens these pests are so rampant that they cannot be ignored. I have a lively remembrance of the keen mortification of a certain worthy amateur who, after incurring the expense of wire guards, lost the whole of his first sowing of Peas from mice, which were screened from observation by the guards. When protection is necessary I much prefer sheets of glass laid singly end to end along each row, with a wire stretched over them to prevent the wind blowing them away, letting the plants lit the glass as they rise above the soil, thus starving out the mice and tantalising the sparrows. Failing the glass we may resort to pieces of slate or roofing tiles, being careful, however, to remove them immediately the Peas reach the surface, and using wire guards or netting to keep off the birds; the seed vegetating under such opaque coverings quite as readily as it does under glass.

For smaller seeds, such as Cauliflowers, Brussels Sprouts, and kindred subjects, make the drills deeper than usual to afford space for an inch or two of the same gritty substance as was used for the Peas, enveloping all the seeds in a precisely similar manner; also take especial care to put netting over the seed beds a few days after sowing; birds' eyes are keener than ours, and they will detect the sprouting growth long before it is visible to us. I have known sand to be used very successfully for covering seeds, but I hesitate to recommend it, for in ironstone districts the whitest sand usually contains sufficient oxide of iron to destroy the seed germs as they start into activity; sometimes the young growth will force its way

through the sand, but even then the delicate cuticle of the stem suffers so much from contact with the sand that the plant soon fails. For Carrots, Parsnips, Beet, and Salsify it has been shown long ago that holes filled with fine, rich, gritty soil for each root insures a crop; the plan is a tedious and laborious one, which we would gladly dispense with at this busy season of the year, and is only recommended when failure is inevitable without it.

A greater amount of success attends the general culture of flower seeds, because many of them are raised under glass in pans; but even with this advantage a little extra care makes all the difference between success and failure. Very minute seeds, such as of Gloxinia and Begonia, answer best if sown on a damp surface and left to vegetate uncovered with soil; but then excessive evaporation must be checked, for if they are exposed to the sun or any parching influence watering will be necessary, involving much risk of washing away the seed; moreover, to suffer such seed to become very dry just as vegetation takes place is to destroy it. The best plan, therefore, is to place the pans in a genial temperature, and to exclude light from the seed till growth begins. Formerly I used pieces of muslin, but now prefer sheets of thick paper placed upon the tops of the pans immediately after the seeds are sown, and thus avoid all risk of failure.—L. E.

Vine Extension.

It is undoubtedly true that the more latitude and freedom allowed to the shoots of a Vine the longer will the latter continue in good health and bearing. This is evidenced by the remarkable specimens to be seen at Hampton Court, Cumberland Lodge, and Manresa House, Roehampton. The former is about 130 years old, the next mentioned (propagated from it) has reached the age of 100, and the latter is, I believe, nearly forty years. All of these are still vigorous, and annually bear large crops of fruit. That this would not be the case had their growth been more restricted is not difficult to believe. It is recorded by travellers in the East, that in some parts of Palestine the Vine grows most luxuriantly, developing into trees with stocks 1 foot in diameter, and yielding bunches of enormous weight.

In the cultivation of the Vine in our glass houses at home, its development under natural conditions is, I think, not sufficiently borne in mind. I know well that the shoots must be kept within certain bounds, but in my opinion the latitude allowed them is often not nearly so much as ought to be and might be given. In the first place, permanent Vines are frequently planted too thickly. A distance of 3 feet 6 is not too much to allow between late Vines, though early forced ones may be placed 3 feet apart. Instead of following the usual practice of planting permanent Vines at intervals along the front of the house, I would suggest that temporary ones be put there, and that two plants, to ultimately fill the whole vinery, are planted in the centre of this latter, about 4 feet apart.

The method of training I would recommend is to allow the canes to reach the top of the house as quickly as is consistent with the proper development of fruit spurs at the same time, and then to train the rods in exactly opposite directions—i.e., towards each end of the vinery. Eventually, at distances from 3 to 4 feet, lateral canes, at right angles to the above, would be allowed to grow down the trellis to the bottom of the vinery. Such a system of training is advantageous, because the temporary Vines are not interfered with in the least for some years, and would not suffer at all from the presence of the permanent ones. The former, of course, would be gradually removed as the latter advanced.

It is generally recommended that the growing shoots of a Vine are best stopped at two or three leaves beyond the embryo bunch. I think it is a mistake, however, to lay down a rule at all for this work, for the more healthy foliage that can be developed the better will the plant be able to thoroughly mature its crop of fruit, and the amount of foliage there is room for must be determined by the cultivator. Important as it is that shoots in their young state should not be excessively pinched, it is also most necessary to exercise care in this matter when a crop of fruit is developing. One gardener—a few years ago a prominent and successful exhibitor of Grapes—used to allow his Vines to grow at will when bearing fruit. The shoots would even reach down the back wall of the vinery, so luxuriant did they become, and the success of this practice was evidenced by the numerous prizes awarded to Grapes cultivated by this gentleman.

The direct action of sunlight upon the berries in the processes of colouring and ripening does not appear to be so necessary as that of air undoubtedly is, for even when Vine shoots are shortened considerably more than advocated by the writer, very little sun is able to penetrate between the large fully developed leaves. I do not see, therefore, how the treatment above mentioned can be otherwise than beneficial to the welfare of the Vine and its crop of fruit.—H. H. T.

London Gardens over Fifty Years—No. 21.

WHEN the growth of the metropolis forced many nurserymen to migrate where land was cheaper and smoke less abundant, they had choice of localities around the villages or small towns at an easy distance. Kent, the garden of England, might well have its attractions, so might sunny Surrey if the flats of Essex are not inviting, but Middlesex, in some respects, has most advantages. Accordingly we find that though both Kent and Surrey have some nurseries near London, a greater number are located in West Middlesex, with a few of note are in the north of that county. Entrenched about such places as Hampton, Isleworth, and Twickenham, adjacent to the Thames, nurserymen may as yet defy the aggressive builder and compete successfully in the market with those who send in supplies from long distances.

Fifty years ago only a small show of nurseries was observable in these localities, and few orchards, but there were some market gardens. Two or three nurseries, which dated from the time of George III., have gone and left no trace. There was the establishment of Ronalds & Son of Brentford, to take one instance (Scotch folks again, I suppose), which Loudon mentions as of repute for its fruit trees and evergreens. Twickenham was famous in Loudon's time because of its hundreds of acres of Strawberries, but it has a less extent now. "I roamed all about Strawberry Hill," said a friend sorrowfully after a summer visit; "the place is pretty enough still, but I never saw there even one Strawberry."

We should naturally think that the Thames valley and its near localities would be well suited for plants of the Liliaceous and allied tribes—in fact, many are grown, both in Middlesex and Surrey, along the river. The cultivation of showy flowers often pays better than that of vegetables, especially such plants as are brought forward under glass. Therefore, we see fewer plants now in the open than formerly; quantities of hardy species in bloom come to market from districts where land can be rented cheaply. Crocuses have been largely grown under fruit trees, also in raised beds, which sometimes occupy half an acre of ground, the common yellow, blue, and white being mostly patronised. Some Lilies are also set in open ground, then lifted and potted before they bloom; but in many nurseries it was usual to pot them during the autumn, in soil composed of fibrous loam, cow manure, and leaf mould. They were put into cool pits or houses, allowed plenty of light and air and not much water till the shoots made their appearance. Heat was given after the buds began to show. Narcissi have been grown largely along the Thames valley, finding a place in orchards, or sheltered corners near walls. We have noticed the Pheasant's-eye Narcissus planted in rows with Moss Roses, as being usually over before the Roses are leafing. The Paper-white species, *N. papyraceus*, with its small pure white flowers, is earlier, blooming naturally about February. Many others of the Narcissi imported from Holland are forced in various ways.

The neighbourhood of Twickenham is rather prolific in bulbous plants. Amongst its nurserymen I remember Messrs. Hawkins and Bennett, whose establishment bore at one time the name of Lily Gardens. Twenty years ago they were large cultivators of the Stephanotis, and in 1879 they had the Banksian medal awarded them for a group of Pelargoniums, including Vesta, a new double scarlet Zonal. Some of the folks there used to grow the Arum Lily by planting them out of doors during the summer, forcing them later on. At Acton, however, Reeves upheld the plan of growing them wholly in pots; this became the common method. He had a grand show of blooms in his houses a few weeks before Easter. *Richardia maculata* was first brought out, I believe, at the West London Nurseries; admired for its spotted leaves, it has not gained the popularity of our familiar *R. æthiopica*. Then, half a century ago, the Roman Hyacinth, much in request now, was not much known. It does not seem to have come to us from Italy, unless by way of France or Holland. Nurserymen soon discovered a succession of blooms could be easily and profitably forced. The usual London method has been to place the bulbs thickly in boxes, covered with spent hops or cocoa-nut fibre refuse; they are kept out of doors till about 2 inches high, then by the aid of warmth the spikes rapidly appear. A blue variety of this Hyacinth has not been much patronised yet.

About Christmas some folks pay 5s. or more for a pot of Lilies of the Valley; while I am writing they are cheaper, and from farther up the Thames clumps of them go into the homes of workers at Bermondsey, Lambeth and other busy suburbs, where we see them displayed in windows. But, in some districts, pots do not satisfy, the people contrive to have, possibly in a small front garden, a little bed of the plants carefully guarded against cats and children. Sparrows do not touch Lilies of the Valley, deterred probably by the acridity of the juice. With management these are coaxed to put forth at least a few flowers every season. There have been shady nooks along the Thames in which the plants were raised out of doors, bunches of the

flowers being sent to market during the spring, but they are now brought on under glass from imported crocus. For the early demand single crowns are forced; for the later, clumps of the plant having a dozen buds or more. The London growers have found, as their Dutch friends pointed out, that too rapid forcing is apt to make some of the best crowns turn blind.

The year 1900 will be remembered as one in which the old controversy about the Shamrock was revived, owing to the general

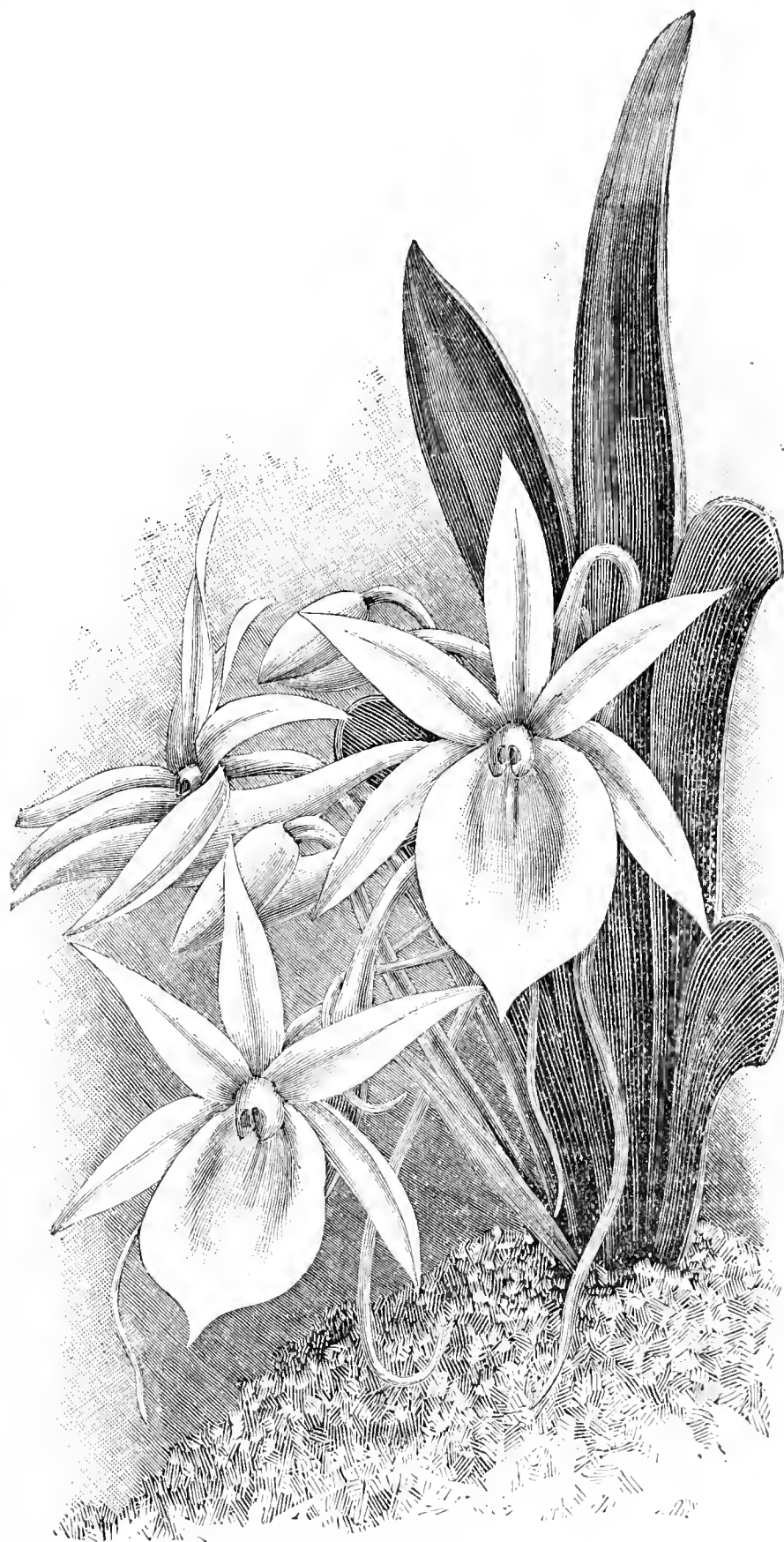


FIG. 84.—ANGRECUM LEONIS. (See page 331.)

wearing of it on March 17th. It is never likely to be settled, yet there is strong evidence in favour of some Clover, probably the common spotted-leaved *Trifolium repens*. No doubt we might agree to adopt any plant and say that henceforth shall be the Shamrock. Many have believed in the Wood Sorrel just because it is found about Irish boggy woods; also the plant seems to have had sacred associations, for Gerarde calls it not only Cuckoo Meat, but "Alleluiah," because it flowered near the time when Alleluiah was said in the churches. It seldom opens till the end of April. The plant still grows freely in some parts of Epping Forest. Books on gardening, not very ancient, mention the Wood Sorrel as cultivated for salads and mixing with boiled greens. It was propagated by dividing the bulbous roots; and planted in the shade, by keeping it from coming into flower, gardeners managed to cut a succession of fresh leaves till October.

Only a small proportion of the Violets sold in London at this season come from its rural suburbs, yet some are grown near them, as about Richmond, Teddington, Twickenham, and places adjacent, beds of Violets being often formed in orchards. A bank sloping towards the south will give a fair quantity of blooms in an average autumn. Of course for a winter supply the plants must be kept in houses or pits; they only require a moderate warmth. After the third year most London growers pull up the plants and make new beds, because the flowers degenerate by that time. Though as a fact the roots of Violets do not go down deeply, they flourish when there is underneath them some depth of good soil. Mostly the plants are put in rows, alleys being formed, so that the flowers may be gathered without treading on them. Part of the Wallflowers now coming into the market are grown about the western suburbs, such as Twickenham and Isleworth; they are found to thrive best in shady places, and as a rule they are treated as annuals. Seeds are sown in February, and when the young plants are big enough to handle they are placed in rows about 12 inches apart. Some of these rows may be seen nearly half a mile long. The darkest coloured Wallflowers are still most liked; also they are found to bloom better and earlier.

To London gardeners of the present he is simply a name, but those of the forties or fifties, many of them, knew well Wilmot of Isleworth. He was extensively engaged in forcing, and outdoor culture too. I think he had above 100 acres of land when I first heard of him. Amongst his specialities was Wilmot's Early Forcing Bean, which he grew largely. Pines he cut every day of the year; his were mostly forced in pots, plunged in fermenting bark, in narrow houses slightly sunk in the ground. Of Vines he had an immense quantity; a few on walls, the bulk under glass. The Black Hamburg was the kind he favoured more than others, but he showed the Mill Hill Grape, which he appears to have named and found productive, so had several houses devoted to this sort. Mr. Beck's nursery at Isleworth used to send out every year a variety of Pelargoniums raised from seed; he also had some choice Orchids. Amongst the modern nurserymen of the district we remember Abear, Lee & Son, and Weathers. In a former article, dealing with part of the West of London, I should have referred to Mr. Buller, of Kensal New Town, who was, twenty years ago, a successful grower of Agaves, Aloes, and miniature succulents.—J. R. S. C.

Fatality Among Broccoli.

A COMBINATION of circumstances has once again borne testimony to the uncertainty of winter and spring Broccoli, the dearth of which, as well as some other vegetables, being such, that the gardener's lot at the present time is anything but an enviable one. The fatality among Broccoli is more directly attributable to the severity of the winter's frost, and notwithstanding that the frost spells were of short duration, the injury inflicted is now only too clearly apparent in patchy beds and bare ground. There are invariably more or less heavy losses when frost exceeds 20° on several consecutive nights, and this has happened at two or three different periods of the present winter.

The effects of the frost have been accelerated without doubt by their late growth, consequent on the prolonged drought of last summer, followed by autumn rains and mild growing weather. The latter sustained leaf development, and consequently a sappy nature in the stems and heart of the plants until quite late in the winter, and such severe frost following closely on this could not be expected to be other than fatal in its effect. It is five years since there were such a poor crop of outdoor vegetables, and that winter was noteworthy for the prolonged and deeply penetrating frosts. Then there were almost continuous frosts for well-nigh three months.

All varieties have suffered severely, but needless to say the early Broccoli are those which fared the worse. Of some varieties there were whole breadths completely destroyed, in others few remain. The late ones, such as Late Queen, Veitch's Model, Continuity, Knight's Protecting, Sutton's Bouquet, and Southampton Late White, are some of those which are present in irregular numbers, but in none is there a full row. This not only constitutes a great loss of labour, but it entails such a loss of material, and, moreover, there is an absence of a vegetable so indispensable for the dining-room, reducing the supply to a state of monotony. Every care was taken to choose firm soil for this crop, and it is very distressing to see one's stock dwindling down in some kinds to nothing, after so much time and labour have been spent on sowing and planting. One almost despairs of planting Broccoli at all.

Where there are vacant glass structures or spaces in them that can be utilised for lifting and storing the early varieties, a supply can be maintained for some time, but this is not a frequently met with convenience in private gardens. It has happened that following such

winters as the past one, resolutions are made not to grow so many Broccoli, and this, when acted upon in summer, is regretted when the winter comes and does not prove severe. It is best to take the seasons as they come, and not to relax efforts because of failures. Severe winters are not often succeeded by others of the same nature. Snow is generally looked upon by the inexperienced as a blessing in disguise as regards outdoor vegetation, but this certainly does not apply to Broccoli so favourably. In its melted state it settles in the hearts of plants, and is overtaken at night by scorching frost, and to this cause much of the dearth of Broccoli is due at the present time.—W. S.

Culture of Nephrolepis.

WELL developed examples of this Fern are among the choicest plants for decorating a shady corner in the conservatory in summer. Although a stove evergreen Fern, being a native of the tropics, it succeeds very well in an intermediate temperature, and may be employed in structures where there is but little heat in summer and autumn other than the natural temperature.

The Nephrolepis lends itself readily to propagation, both by division of plants at the present time, or by pegging down some of the best of the creeping stems which are thrown out by vigorous healthy plants from the base. In the latter case drain some 3-inch pots and fill with a mixture of peat, loam, leaf soil, and sand. Fasten down young plants upon this, allowing them to remain attached to the creeping stem until rooted and independent plants are formed. Divisions to form new stock may be taken from the outside of large old plants, but the most vigorous are best found on younger specimens which have not been root-bound for so long. The fronds attached to the most suitable divisions should be comparatively short, fresh, and green. Large yellow fronds attached do not serve any useful purpose, and should be cut off if present. Place the pots on a damp base in heat and moisture, syringing lightly every day until established.

Young plants may be given a shift when roots are becoming numerous. Spring is usually the best time, root activity increasing daily, inciting new fibres to take possession of the new soil. Plants established in pots from 5 inches to 9 inches diameter are the most useful and portable for decoration, while for forming large specimens 10 to 13-inch pots may be employed. Of course the plants must be gradually moved on to the larger sizes. Water sparingly immediately after potting, rather maintaining the soil moist with gentle syringing than saturating the new compost with too free watering. The fronds being long and narrow are liable to fall about if not lightly held together with a strip of matting run round three or four slender stakes.

The Nephrolepis also makes an excellent basket Fern. *N. pectinata*, *N. davallioides*, and *N. davallioides furcans* are the best varieties for growing in this way. Wire baskets should be used, lining these with a layer of sphagnum moss. Utilise plants of a size corresponding to the baskets, and which will admit of a fair quantity of compost being introduced for them to root in. Hang up the baskets in a warm moist atmosphere, and syringe daily. Heavy watering will not be needed at first, simply keeping the moss and the soil healthfully moist. Shade from sun. When well established in the receptacles large and imposing specimens are formed, which prove attractive for some years. As the Nephrolepis is an evergreen Fern, it is ornamental the year round so long as the fronds are healthy. When the roots have permeated freely into the compost, and this is indicated by the vigorous condition of the new fronds, the baskets may be suspended in a cooler temperature than they were in previously.

Watering is of importance; therefore, in placing the Ferns in the baskets keep the crowns fairly low down, and do not fill in the soil to the top, so that there remains ample room for watering. However, with this attention the baskets are liable to dry through rapidly, and the ordinary method of watering fails to moisten them. Under these circumstances soak the basket in a vessel of water. It may not be necessary to do this the first season, except the baskets are very small.

Besides *N. davallioides* and its robust crested form *furcans*, above mentioned, we have in *N. Bausei* a pretty variety; *N. Duffi*, which ought to have been mentioned as a good basket variety, is exceedingly ornamental. The fronds are peculiar, the pinnæ being of rounded shape and closely set on the midrib. Each frond is several times divided before the tip is reached, and each division is also branched at the tips. The growth is tufted and of close habit. A very distinct variety, differing entirely from the varieties mentioned, is *N. rufescens tripinnatifida*. The pinnæ are closely set and overlap each other to some extent, which gives the frond a very full bold appearance. *N. exaltata* is also a well known handsome variety, and should be included in every collection of stove Ferns.—E. D. S.

NOTES & NOTICES

Recent Weather in London.—The weather in the metropolis during the past few days has been decidedly pleasanter owing to the cessation of cold winds. Both Saturday and Sunday were fine on the whole, though the sun did not shine very brightly. On Monday morning it was quite foggy, but the sun shone brilliantly later. Rain fell rather heavily in the evening, but it was not cold. Tuesday was an ideal spring morning. Wednesday opened dull, and was inclined to be showery.

Weather in the North.—On three mornings of the week ending the 9th inst. frosts of 2°, 3°, and 4° occurred, the last on Sunday morning, when the hoar frost was very dense. The days have been alternately dull and bright, and occasional showers have fallen. Cold easterly winds have generally prevailed, but on Monday the wind changed to the west, bringing intermittent cold showers.—B. D., *S. Perthshire*.

Royal Horticultural Society—Special Notice.—Notice is hereby given that a general meeting of the society will be held at 117, Victoria Street, Westminster, on Wednesday, April 25th, at 2 P.M. (i.) To consider, and sanction if approved (either with or without addition, omission, or alteration), certain new by-laws rendered necessary by the Supplemental Charter lately granted to the society. (ii.) To consider and adopt, if approved, the following resolutions, viz.:—(a) That in accordance with the recommendation adopted unanimously at the annual general meeting to celebrate the centenary of the society by removing the gardens from Chiswick, this meeting adopts the proposal of the council to purchase a freehold site in the parish of Limpsfield, in Surrey, and authorises the council to take the necessary steps for acquiring the said site, and for developing new gardens thereon. (b) That this meeting authorises the council to enter into negotiations with and to obtain the co-operation of the Board of Agriculture and Horticulture, the University of London, and the County Councils, with a view to the establishment in connection with or in affiliation to the society, of a representative School of Practical and Scientific Horticulture; the scheme to be duly submitted to the Fellows for approval. N.B.—The Supplemental Charter and the new by-laws will be printed in full in the next number of the Society's Journal, vol. xxiii., part 3. Fellows requiring an advance proof of the by-laws can obtain it on personal application at the society's office. By order of the council.—W. WILKS, *Secretary*.

Scottish Horticultural Association.—The monthly meeting of this association was held in the rooms, 5, St. Andrew Square, Edinburgh, on April 3rd. Mr. M. Todd, one of the vice-presidents, presided over a large attendance. The lecturer of the evening was Mr. David P. Laird of Pinkhill Nurseries, Edinburgh, and his subject was that of "Ornamental Trees and Shrubs for Town and Villa Gardens." As Mr. Laird remarked, the subject was too extensive to be treated in detail, but the manner in which he dealt with it showed a careful grasp of the wants of town and villa gardens, and how they could best be met. The several heads of the paper covered the leading factors in the problem of the best things to plant and under what conditions they should be planted. The paper was of a high order of merit, and was made all the more agreeable by the humorous hits at his own occupation and those who followed it. A valuable suggestion for those about to build a house was that the architect should set apart a sum for the planting of the grounds, so that the extras which always occurred should not absorb all the amount intended to be spent, and was supported by a quotation from Mr. Lorimer, a well-known architect, to the same effect. The Lime was mentioned as an unsuitable tree on account of its size and the early date at which its foliage became sickly looking. A lively discussion followed, taken part in by Messrs. Arnott, Murray, Fish, Lonie, Grieve, and others. Mr. Fish made a vigorous and poetical defence of the Lime. The chairman made a valuable contribution to the discussion, and Mr. Laird was accorded a hearty vote of thanks. It is proposed that the annual excursion of the members be to Keir in June, if it can be arranged.—S. A.

Midland Daffodil Society.—The exhibition at the Edgbaston Botanical Gardens is fixed for Wednesday and Thursday, April 25th and 26th. Notice of entry for competitive exhibits must be received not later than Monday 23rd (as Rule 2), but where entries can be made the previous week it will help very much. The committee hopes to hold a conference on the morning of the second day of the show, and would like to meet as many members as possible, when any suggestions could be brought forward and discussed. Exhibitors are requested to note that the non-naming of flowers may lead to disqualification. The secretaries are Messrs. J. Jacob and H. Smith, Tenby Street, Birmingham. The National Auricula Society (Midland Section) will hold its first annual exhibition in connection with the above on the first day only.

Birmingham Gardeners' Association.—At a recent meeting of the members, presided over by Mr. Walter Jones, Mr. F. W. E. Shrivell, of Thompson's Farm, Golden Green, Tonbridge, was responsible for an interesting and instructive essay on "Chemical Manures in the Kitchen Garden." The lecturer gave statistics adduced from some important experiments on a large scale which he had undertaken during a period of several years upon the comparative values of dung and chemical manures in regard to especially Asparagus, Broccoli, Brussels Sprouts, and Rhubarb, the latter both naturally grown and forced. Of fruits, Damsons and Strawberries were specially recognised. Potash or kainit was pronounced to be not suitable for the Strawberry plant, and the variety experimented on was Royal Sovereign.

Wolverhampton Floral Fete.—The dates fixed for this popular exhibition are July 10th, 11th, and 12th, and full particulars and schedules may be obtained from the secretary, Mr. W. E. Barnett, Snow Hill, Wolverhampton. It is the rule of this society to offer excellent prizes, of which £50 for a group of miscellaneous plants, and £45 for sixteen stove and greenhouse plants may be quoted as examples. This year five new classes have been added, of which one is for a collection of Orchids, with £24 to be given in three prizes; one for twelve bunches of Roses with £10; one for a collection of pot Roses with £18; one for a collection of hardy herbaceous plants with £4 4s.; and one for a floral display with £13. To the first prize in the last named class a 25-guinea challenge trophy will be added. These five classes alone, with such generous prizes, ought to be sufficient to make a show in themselves.

The Royal Meteorological Society.—On Tuesday, the 3rd inst. the Royal Meteorological Society celebrated its jubilee, having been founded on April 3rd, 1850. A commemoration meeting was held in the afternoon at the Institution of Civil Engineers, Great George Street, Westminster, Dr. C. Theodore Williams in the chair. There was a large attendance, including delegates from a number of other scientific societies. In view of the jubilee the late Mr. G. J. Symons, F.R.S., was elected president at the annual meeting on Jan. 17th, but owing to his being seized with paralysis he was obliged to resign the office. Dr. Williams, in concluding his address, stated that Mr. Symons had bequeathed to the society £200, as well as the bulk of his library. Brief addresses were delivered by Prof. J. J. Thomson, F.R.S., on behalf of the Royal Society; by Mr. E. B. Knobel, president, on behalf of the Royal Astronomical Society; by Mr. J. J. H. Teall, F.R.S., president, on behalf of the Geological Society; by Mr. R. C. Mossman, F.R.S.E., on behalf of the Scottish Meteorological Society, and by Mr. A. Wynter Blyth, M.R.C.S., on behalf of the Sanitary Institute. Prof. Dr. G. Hellmann presented an address from the German Meteorological Society, and also spoke in appreciation of the valuable work done by the Royal Meteorological Society. In the evening a conversation was held at the Royal Institute of Painters in Water Colours in Piccadilly, the guests being received by the president and Mrs. Theodore Williams. An exhibition of meteorological instruments was arranged in the banqueting room, and lantern demonstrations were given. The Royal Artillery String Band played during the evening, and short concerts by the "Schartau" part-singers were given at intervals. On Wednesday a large party of the Fellows were shown over the Royal Observatory, Greenwich, by the Astronomer Royal, after which they paid a visit to the Painted Hall and Naval Museum. In the evening a dinner was held at the Westminster Palace Hotel, which was numerously attended, the president being in the chair. The toast of the "Royal Meteorological Society" was proposed by Mr. W. N. Shaw, F.R.S. Gen. Sir H. W. Norman responded for the Army; Prof. Silvanus P. Thompson, F.R.S., for the delegates, and Dr. Pavy for the visitors.

Cambridgeshire Horticultural Society.—This society has been established for about three-quarters of a century, but it still continues a useful work in furthering the interest in horticulture. This year it is holding two exhibitions, the first of which will be held on Tuesday, June 12th, in the gardens of King's College. In addition to upwards of six dozen general classes we find special prizes for Roses, and £22 offered for twelve stove and greenhouse plants. The autumn show takes place in the Corn Exchange on November 7th and 8th, and classes are provided for various plants and flowers as well as Chrysanthemums and fruit. Numerous excellent prizes are offered, and the competition should be good. The honorary secretary is Mr. Arthur Matthew, 20, Trinity Street, Cambridge.

Croydon Chrysanthemum Society.—Croydon has long held a splendid reputation for its Chrysanthemum shows, and so long as the energy and enterprise of the committee and the secretary, Mr. W. Beckett, 272, Portland Road, South Norwood, are continued the status of the society should be maintained. The centre of attraction at the show has been the class for thirty-six Chrysanthemums, in which a challenge cup accompanies the premier prize. This year's exhibition, to be held on October 30th and 31st, should prove no exception, as Frank Lloyd, Esq., is offering a 25-guinea cup for competition, his gardener, Mr. Mills, having permanently annexed the one previously offered. This ought to provoke keen competition, especially as £5, £4, and £3 are given in addition to the cup. The schedule comprises about fifty other classes.

The Reading Gardeners' Association.—The fortnightly meeting of the above association was held on Monday evening last in the Club Room at the Old Abbey Restaurant, when Mr. E. Fry presided over a good attendance of members. The subject of the evening was "Vegetables: the Varieties I Grow, and Why I Grow Them," by Mr. John House, The Gardens, Northlands, Winchester, one of the earliest members of the association. Mr. House, in mentioning the varieties he grew, said that he was greatly handicapped in his selection, as he had to contend with a soil of only 18 inches in depth, and therefore many sorts which Reading gardeners could grow would be utterly unsuitable for his district. An interesting discussion followed. A feature of the meeting was a large and splendid exhibit of flowering bulbs by Mr. F. Lever of The Gardens, Hillside, especially noticeable being Alba Regalis, Vermilion Brilliant, Crimson King, Blanchard, Silver Wing, and Fairy Queen Tulips; King of the Blues, Obolisque, Yellowhammer, and La Belle Hyacinths. A remarkable freak was seen amongst the Tulips, two bulbs in one pot carrying no less than nine blooms. Mr. Cretchley, The Gardens, The Honeys, Twyford, staged a lovely specimen plant of a light-coloured Star Cineraria.

Liverpool National Amateur Gardeners.—A great move is being organised by the president and committee of the above branch to make its influence more far reaching than it has hitherto been. Many new members have been enrolled, and subscriptions obtained freely, so that with such an enthusiast amateur president as Mr. A. W. Ardran and the stirring new secretary, Mr. Macgregor, the branch bids fair to beat all previous records. On Thursday last the Common Hall, Hackins Hey, Liverpool, was crowded with an appreciative audience, amongst whom were noted Mr. R. W. Ker and several professional gardeners. Mr. Duckett Cowan, of the Gateacre Nurseries, lectured on his "Reminiscences of My Travels Collecting Orchids in South America." It was an excellent address, and much appreciated. Afterwards Mr. Ardran admitted having changed his opinion expressed when Mr. Pennington read his paper on "Orchids" last season. At that time he thought the study of Orchids was not a suitable one for an amateur to take up, but thanks to the information gained he was now a most successful grower, and Mr. Cowan's lecture had tended to increase his enthusiasm. Mr. J. H. Drake, another successful amateur, also spoke, and a hearty vote of thanks was proposed to the lecturer. The exhibits were especially good. The following awards were made:—A first prize and certificate to Mr. McMillan for a handsome plant of Dendrobium Wardianum; a second prize to Mr. Drake for a beautiful Odontoglossum Rossi majus on a teak block, and arranged on a small easel; a third to Mr. Ardran. The president's prize for plants in bloom, and certificate, went to Mr. Dale for Cyclamens, whilst Miss Hunter won his prize for cut Orchid blooms. Azaleas were well staged by Mr. J. H. Hoskyn and Mrs. Macgregor. Mr. J. H. Drake exhibited a tasteful Orchid spray. The Mignonette, Genistas, Narcissi, and cut flowers owed their effective arrangement to Miss Hunter, and Messrs. Cangle and McMillan.—R. P. R.

Ancient Society of York Florists.—This society has been doing excellent work amidst the gardening community of the ancient northern city for considerably over a century, and this year at its various shows offers £400 in prizes. Instead of concentrating all their energy on one exhibition, the members of the committee spread it over five, and manage to do the whole of them well. The principal one is fixed for November 14th, 15th, and 16th of this year, and it is hoped the Exhibition Buildings will again be well filled. Groups of Chrysanthemums are a great feature, and receive a considerable amount of attention, but cut flowers, plants, fruits, and vegetables all come in for favourable notice. There are over 100 classes, so that everyone should be able to find room. The secretary, to whom all applications for particulars and schedules must be made, is Mr. Geo. F. W. Oman, 38, Petergate, York.

Grand Yorkshire Gala.—The City of York is always *en fête* on the days of its summer show, and this year should prove no exception. The dates fixed are June 13th, 14th, and 15th; and, as usual, the tents will be fixed in Bootham Field. Mr. C. W. Simmons, The York Hotel, York, continues to officiate as secretary, and will supply all needful information. The enormous amount of £750 is offered in prizes, and is divided somewhat as follows:—£300 for Orchids, stove and greenhouse plants; £200 for Pelargoniums, Carnations, and Begonias; £160 for Roses, cut flowers, &c.; and £90 for fruits and vegetables. New classes have been placed in the schedule for Roses in pots, a table of Orchids, a group of Show Pelargoniums, floral designs, an ornamental stand of flowers and foliage, and a decorated table of ripe fruit. The last is, of course, of the greatest importance, and the prizes will be of the respective values of £15, £12, £8, and £5—£40 in all. The judging will be done by points, of which particulars are given in the schedule.

March Weather at Hodsock Priory, Worksop, Notts.—Mean temperature 38.8°. Maximum in screen 55.6° on the 14th; minimum in screen 24.6° on the 12th. Minimum on grass 12.9° on the 17th. Number frosts in shade thirteen, on grass twenty-seven. Sunshine eighty-seven hours, or 24 per cent. of possible duration. Rainfall 0.65 inch. Difference from average —1.00. Rain fell on eleven days. Rain from January 1st 7.52 inches. Difference from average + 2.41. A dry month, rather dull and cold, with a good deal of N.E. winds and a little snow in the last week.—J. MALLENDER.

March Weather at Belvoir Castle.—The wind was in a northerly direction on twenty-one days. The total rainfall was 0.78 inch; this fell on seventeen days, and is 1.02 inch below the average for the month; the greatest daily fall was 0.23 inch (snow) on the 27th. Barometer (corrected and reduced): Highest reading, 30.665 inches on the 13th at 9 P.M.; lowest reading, 29.237 inches on the 19th at 9 A.M. Thermometers: Highest in the shade, 52° on the 14th; lowest, 23° on the 17th; mean of daily maxima, 43.38°; mean of daily minima, 31.35°; mean temperature of the month, 37.36°; lowest on the grass 13° on the 17th; highest in the sun, 105° on the 14th; mean temperature of the earth at 3 feet, 39.51°. Total sunshine, ninety-five hours twenty minutes, which is six and three-quarter hours below the average for the month. There were nine sunless days. *This has been the coldest March here since 1892.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1:00. April.										
Sunday.. 1	E.S.E.	deg. 40.8	deg. 36.9	deg. 43.1	deg. 27.5	ins. —	deg. 38.5	deg. 41.2	deg. 43.5	deg. 18.2
Monday.. 2	W.S.W.	36.2	32.2	49.3	25.3	0.01	37.6	40.9	43.5	17.4
Tuesday 3	W.S.W.	39.9	39.5	52.1	30.3	0.32	39.2	40.9	43.5	22.0
Wed'sday 4	W.N.W.	48.5	44.9	55.1	39.9	0.07	41.9	41.5	43.4	37.2
Thursday 5	W.N.W.	45.0	41.9	49.6	36.4	0.10	43.1	42.5	43.3	27.9
Friday .. 6	W.N.W.	44.3	40.2	53.3	30.9	0.02	43.1	43.1	43.5	23.0
Saturday 7	E.S.E.	43.9	41.3	48.4	39.8	0.01	44.2	43.5	43.6	29.8
MEANS ..		42.7	39.6	50.1	32.9	Total 0.53	41.1	41.9	43.5	25.1

For the most part the weather during the past week has been dull and cold, one or two days, however, being quite springlike.



Apple Sturmer Pippin.

I WAS rather astonished to read the depreciatory remarks of "E.," page 271, as to the qualities of this, with me, most acceptable and useful of all the late table Apples. My fruit room is not an ideal one, being too light and airy, but I can manage to keep my Sturmers in fairly good condition until May, in which month they are my best table supply. I send you a fruit or two to try as to flavour, and see the keeping, not that it is necessary to send you Sturmers to prove flavour, because you know what a Sturmer Apple is in all its points as well as anybody, and better than some, but that you may see and taste them again, and in this case fruit of only common orchard production. The trees from which they were gathered are some fifty to sixty years old, and year by year give us good crops of some such Apples as sample sent. Late table Apples are undoubtedly difficult things to keep, Adam's Pearmain for one, but I find that these keep best with me put up in boxes, hampers, or cases, holding say a bushel or so, and kept closely covered until wanted. I felt hurt as well as astonished at "E.'s" charge against my favourite Sturmer Pippin, that I have therefore ventured to send you this.—N. H. P.

[With such excellently flavoured specimens as those you send we can easily understand you appreciate Sturmer Pippin. It is undoubtedly a variety of much merit, but unfortunately has come into disrepute with many other growers besides "E." The reason of this would probably not be easy to find.]

Artificial Manures and Peas.

I OBSERVE that Mr. Udale, in his Worcester C.C. Experimental Garden, found the direct application of a complete chemical manure in the drills with Peas proved harmful. That was my experience many years ago with a similar compound, but when applied direct in the furrows with Potato sets it was very efficacious. Remembering that fact, I last year used so comparatively innocuous a manure as native guano in a trial of it on comparatively poor land with Potatoes only, dressing it in with the sets in the furrows, with capital results, in spite of the drought which followed. No doubt the native guano is quickly soluble, and that being so it gave considerable impetus to the plant growth whilst yet young, which was, in the face of the dryness that followed, a great gain.

In using this manure, however, in other ground and with more crops, the first being with Peas, having one row of a variety manured the other not so, in ten varieties, after ordinary drills had been drawn with a hoe, with a fork I lifted out of each other end, to be the manured row, some 2 inches more of the soil, then strewed in the guano dressing, and followed with a fork, well covering it with soil, so that the seed Peas did not come into contact with the manure. I shall watch the effect of this dressing closely. Judging by the smell emitted this guano is of a free nitrogenous nature, and if it exercises any beneficial influence at all on the Peas it will be chiefly whilst the plants are young.—A. D.

Fruit Prospects.

So far as all fruit trees are concerned it is probable that we have not experienced so late a flowering season for many years, and although the weather answerable for this has arrested growth in all vegetable crops it may help to insure a heavy set of fruit. With the sole exception of Apricots all fruits are looking well, and to use a common expression, "bristling with buds." We have to-day (April 2nd) overhauled our stock of fish netting, and labelled it so that it will be ready to hand when required for the different walls, and mended any gaps with a little tarred twine. For spring protection I have always used a double thickness of half-inch mesh netting, and this has only failed us once in eighteen years, when 24° of frost were registered about the middle of April. Farther north a thicker covering is doubtless necessary, but where the fish netting is sufficient I am convinced there is no better material, for protection is afforded, and at the same time the trees have always the benefit of light and air; the extra work entailed by blinds is also obviated. Sufficient of this netting is kept on hand to cover walls devoted to Peaches and Nectarines, dessert Cherries, cordon Pears and Plums.

It is a fact not generally recognised, but one that deserves attention when taking measures for spring protection, that of the fruits named the Plum is most susceptible to frost; only a slight visitation following an afternoon shower is sufficient to destroy all erect flowers.

Where red spider is locally troublesome it is advisable to look carefully over the walls some warm sunny day before the nets are put on, and if the pest is already in evidence on wood and buds to mix an insecticide to the necessary strength and syringe thoroughly, taking care to miss no part either of the wall or trees. I always find it advisable to adopt such preventive measures, otherwise given a dry time the pests make great headway before the fruit is set. Our cordon Gooseberries on a wire fence are also nearly always attacked, and are syringed with the wall trees.—A. G. B.

The New Chiswick.

I HAVE followed with much interest the remarks that have, from time to time, been made relative to the form in which the Royal Horticultural Society should celebrate its centenary. I may say at the outset that I am in entire agreement with "A Fellow" (page 259) in his views as to the council maintaining its freedom from outside interference. To have an advisory committee, each member of which held differing views, would be worse than useless, and I am wholly in favour of leaving the council unshackled until such time as it can put before the Fellows of the society some definite recommendations. Then, if at all, must Fellows be prepared with other definite schemes for the consideration of the society, for there can be no doubt that the proposed removal of Chiswick is a most serious step that may have considerable influence on the success, or otherwise, of the Royal Horticultural Society.

Personally I am of the opinion that the present garden should be retained to the utmost limit of the lease. Of course we hear much about the soil being exhausted, and the deleterious effects of the atmosphere on the plants that are grown. I should, however, like to ask how much truth there is in either of these statements. That the soil is not what it ought to be cannot be doubted, but is it irremediably bad? As for the atmosphere—well, one can only say that excellent results are secured by various growers in situations equally as bad, and in some cases slightly worse. I am not alone in the opinion that it is more a question of means than otherwise to make the garden a success. No one can gainsay the fact that the superintendent, Mr. S. T. Wright, does remarkably well with the material at command. But is this material the best procurable? I should say that it is not. The labour might be vastly improved, and I venture to assert that few gardeners would care to undertake the management of Chiswick Gardens with the staff as at the present moment. There may be plenty of manure and abundance of water, but there are good and bad methods of employing both.

We hear much about the necessity of the students being *workers*, and we read of it in the official report, but we may be satisfied that not three out of ten answer to this description in reality. Certain it is that when they have an uncongenial task, or have one they are tired of, they have to be moved to something else or they will simply kill time. They do not regard themselves as *workers*, hence the difficulty that the superintendent must face in managing them. That the society does not look upon them as *workers* is proved by the fact that they do not start work until after breakfast, and leave early on Saturdays, whereas the ordinary staff commence and finish at the hours customary in the craft. If they were really in earnest they would recognise the fact that the work done before breakfast in the morning is perhaps the most important in the whole of the gardener's day. How would many gardeners like to have the handling of such a staff as this? There is a tremendous difference in the way that a piece of ground is dug, as every practical cultivator knows, and it is only reasonable to suppose that such work is done by the small regular staff, and not by the young, active, and strong learners. Give the Chiswick manager a full staff of thoroughly good men, and I will undertake to say that the results after two years will be vastly different from those of to-day.

As for the proposed national school of horticulture, I think this is scarcely a thing for the Royal Horticultural or any other society to take up. On the contrary, it is entirely a matter for the State. In other countries we find establishments maintained by the State, but in England, which prides itself on its up-to-dateness, we find matters that are unquestionably of national importance, left either to private individuals or societies. True, we hear of the proposed combination of County Councils, but even this would not be an unmixed blessing, as the more fingers there were in the pie the more wars of words there would be, and consequently the less chance of sound and valuable work being done. No, I should say let the State find the national school of horticulture, and let the Royal Horticultural Society turn its attention first to a suitable place in which to hold its fortnightly shows, and secondly to a new Chiswick if such be necessary. In a single sentence, I think that the Council would do more to meet the approval of Fellows by a proper hall than by half a dozen new Chiswicks and schools of horticulture.—ANOTHER FELLOW.

THE agitation, or rather exceeding anxiety, created in the minds of Fellows of the R.H.S. still continues to manifest itself, and will probably not be allayed until the Council opens its mind to them at general meeting. Whether what is then stated will serve to allay

agitation it is impossible to say, as only members of the Council can know the nature of the negotiations entered upon, or arrangements made, in relation to the new grounds and the talked-of school of horticulture. But whilst many Fellows may think that all this anxiety is a little overdone, no one can for a moment doubt but that it is genuine, and aroused entirely by profound interest in the welfare of the society.

It is, however, worthy of note that whatever may be opinions with respect to what is now being done in obtaining new gardens by the council, that the splendid position the society now occupies has been attained to chiefly by the present administrators, and that fact should do much to establish confidence in them now. Never in all its long history has the society stood higher, had a wider sphere of operations, more Fellows, or done such splendid horticultural work as it is doing at present. That fact needs just now to be impressed upon timid Fellows when they seem disposed to become somewhat hysterical in referring to the action of the council. Now, as a Fellow, I prefer to place some confidence in the wisdom of a governing body that has done so much to place the society in its present eminent position. Of this I feel assured, that in any arrangements now being made in reference to acquiring a new garden or even of assisting in establishing a school of horticulture, that nothing will be done hastily, but that the fullest consideration will be given to every fact. Still further, that in whatever is done, the council will place before all other considerations the advancement of horticulture.—F. R. H. S.

Richardia æthiopica.

THE cultivation of these plants is by no means difficult; they delight in a rich open compost and a liberal supply of water during the season of growth. Their elegant and pleasing appearance admirably adapts them for conservatory and indoor adornment, either in groups or as single specimens. The large white spathes last a considerable time when cut, and are thus extremely useful for decorative purposes, used when possible along with their natural foliage. Arum Lilies (fig. 85) may be had in bloom at a time when flowers are somewhat scarce, and on that account are all the more valuable.

There are two or three different methods of culture. Some cultivators prefer to keep their plants growing continually throughout the year, allowing them no rest whatever during the summer months. In this case the stock should be planted out about 18 inches apart immediately after flowering, in land that has been well manured, giving an abundance of water during dry periods. About the middle of September they must be carefully lifted and repotted with as little injury to the roots as possible, and placed inside out of the reach of frost. This system entails more labour, and gives no better results than when the plants are allowed a rest.

When the plants are to be rested they should be put outside during the first or second week in June in a position where they will obtain all the available sun. Gradually diminish the supply of water until the plants have lost their foliage, when it should be withheld altogether and the pots turned on their sides. About the middle of August they will show signs of fresh growth. They must be repotted before they are very far advanced. Shake away the old soil and rub off all suckers, leaving only one crown to each rhizome. The size of pots required will be governed by the condition of the roots and the purposes for which they are to be employed, pots varying from 7 to 9 inches in diameter being used, with from one to three plants in a pot. When repotting the base of the new growth should be buried about half an inch deep. The compost may consist of three parts of good loam, two parts of decayed manure, adding a little bonemeal and soot, with sufficient sand to keep the whole porous. Stand the plants outside in a shady position, and keep the soil moist by gentle waterings with a rose can.

Towards the end of September it will be necessary to place the plants inside beyond the reach of frost. Any cool house will answer the purpose provided they receive all the light possible, they will then make steady progress without being drawn. As soon as they have got well into growth liquid manure from the cowhouses may be given in limited quantities two or three times a week, with an occasional application of some fertiliser. Soot water is an excellent manure, imparting a deep green colour to the foliage. It does not encourage gross growth, and the presence of ammonia in the house is not so perceptible as from liquid manure from cowsheds. If the plants can be given a temperature of 45° the earliest will commence to bloom about February, and the supply will be continued until the end of May or June.—S. P.

Hardy Annuals.

(Concluded from page 242.)

WHILST providing for a good patch it is advisable not to sow too thickly, though it is better to have to thin than re-sow or transplant. When sown very thickly it is hardly possible to thin the patches without injuring the remaining plants. When the seeds are sown draw the earth over them, covering them no deeper than their own diameter. It is better to cover lightly than deeply, for annuals do not require to be kept or placed in so much darkness as farinaceous seeds. It is sufficient if the seeds are just covered with soil, or kept in the dark, so that the chemical changes which take place in germination may go on. If the ground is dry, it is a good plan to water the patches, and cover them with inverted flower pots, so as to secure uniform moisture in the soil, and obviate the necessity of repeated waterings. The sun's rays, consequently, will not bake or dry the surface, and the inverted pots placed over the patches will absorb heat by day and radiate it at night, so that the seeds will not be roasted at one time and frozen at the other. When the plants appear the pots should be removed, but they may be replaced with advantage on frosty nights, taking care to remove them by the time the soil is thawed.

Where the soil is of a tenacious nature, and at all rough at the time of sowing, it is a good practice to cover the seeds lightly with some light soil, which should be fine, or made so by sifting. Care must be taken in open soils to well pulverise them before sowing the seeds, for it not infrequently happens that the seeds run down the openings, and are lost for that year at least, by being buried too deeply in the soil. Where any danger of this is apprehended, a small portion of sifted mould ought to be placed on the soil for the seed to be sown on. The seeds of some annuals are so small that it is scarcely possible to cover them too thinly, but none will take harm if covered to no greater depth than their own diameter.

When the seedlings are fairly up a ring of dry soot should be placed round each patch to prevent the nocturnal visits of slugs, which will in a single night devour a whole patch. If these pests are troublesome some fresh Cabbage leaves, laid at night near their haunts, and examined in the morning, will collect a great many; and if they be brushed off the leaf into a flower pot, and a little salt sprinkled over them, they will not trouble the cultivator any more. This, repeated for several nights, will soon rid a garden of slugs. Should the weather be dry, the annuals must be watered, and the ground between the patches frequently stirred with a hoe; but a rake cannot be too little used, for the surface ought never to be made fine, so as to throw off rain into the hollows. On the contrary, it should give free access to air and moisture. The aim of the cultivator must be the well-being of his plants, and not that neatness which is secured at the expense of their healthy growth. The longer the soil is kept open the more satisfactory will be the results. When the plants are a few inches high they should be thinned, if too thick. Those which attain to less than a foot in height should be thinned to at least an inch apart, and those growing to a greater height ought to be at least 2 or 3 inches clear of their neighbours. The thinnings may be planted to fill up vacant spaces, or to supply the place of failures. Showery weather is the best for thinning annuals.

As the plants advance in growth care should be taken to stake such as require support, and to place wire trellises for climbers, or sticks for them to cling to, before the one be broken by the winds, or the other spoiled and leggy from creeping on the surface. In dry weather the borders should be well watered, and the surface between the patches frequently stirred to keep down weeds and keep the surface open; and this stirring is best done before the plants feel the effects of drought, or the surface becomes baked or smothered with weeds. It is too late to water annuals when they have become stunted in growth, and surface stirrings after this has taken place are vain. They may indeed improve, but the best plan is to act so that there is little to wish for. When they are in flower they should, if the weather is dry, be well supplied with water. It will much prolong their period of bloom, the flowers will be larger, and the pleasure derived from them will be ten times greater than when they are grown in places altogether unsuited to their proper development.

In sowing annuals due regard must be paid to the habit of each kind and the height to which it attains. Those of trailing and dwarf-growing habit should be sown in front, and the others distributed at such distances from them as their heights may determine. Half the height which any variety grows to is the proper distance to leave between the patches or rows. The tallest should, of course, be sown at the back, and the height gradually diminished towards the front.—PRACTICE.



Fig. 85.—*RICHARDIA* *ÆTHIOPICA*.

Planting Young Vines.

SINCE writing the original article *re stopping Vines* (p. 182, March 1st) I have planted two vineries, each 30 feet in length, lean-to's, facing south. These structures were built, I am informed, by Messrs. J. Weeks and Co. nearly thirty years ago, and are still in a fine state of preservation. The new borders I was obliged to make outside, as considerable expense would have been incurred inside by the removal of three rows of pipes, a cement floor, and a brick wall 3 feet high, which ran parallel with the outer, or the wall which supports the front part of the roof. This inside wall is 18 inches from the outer wall, and both formed a support for a front stage made with huge stone slabs 3 inches thick, since replaced by me with a movable light wooden trellis. This space I have filled with soil, with the intention of planting young Vines next month, which are now being propagated from eyes in the ordinary way. These young Vines will come just between the permanent Vines, that pass through the walls, 4 feet apart, from the outside borders. If these young Vines thrive well I shall crop them next year and the year following, after which they will be cut out, and the Vines in the outside borders will be capable of bearing a fair crop much better than if allowed to carry Grapes the first two years.

The Vines I found in the first vinery were planted when the houses were built, and the drainage was 1 foot in depth on a clay subsoil, over which had been put 3 inches of gravel rammed hard. The second vinery had been twice planted, the last time about ten years ago. Here only 6 inches of drainage had been provided, which was choked with fine soil, and the border consequently quite inferior to that of the early vinery, though it had been made less than half the time. Both vineries had been indifferently managed, and were so full of bug that I decided the safest and most permanent remedy would be to remove the Vines in each house and plant with fresh ones, in the meantime having the houses thoroughly painted and the walls limewashed.

The whole of the soil from the two outside borders, which were 15 feet wide, was carted away, and the drainage cleaned and the bottom freed of all fine soil. As plenty of old whole bricks were at hand drains were formed 8 feet apart with them, from the back to the front. To construct these two rows of bricks were placed edgewise, just far enough apart for a brick, when placed flat, to securely span the two rows, and thus form an admirable drain. If slates had been at command I should have put the bricks on these to prevent worms working soil up and filling the drains, though I do not think they can do so through the clay and gravel bottom. If sufficient 4-inch drain pipes could have been got without expense I should have used these and run them into a main drain. The drainage material consisted of broken bricks a foot in depth, thus covering the drains. This gave a depth of 2 feet 9 from the drainage to the front sill of the window sashes. The drainage was covered with turves, placed grass side downwards, but previous to this I put two 12-inch boards edgewise on top of each other, with stakes driven in each side of them to keep them in position. This method is, I think, preferable to a turf wall for keeping up the soil the whole length at the front of the borders. These borders were made 9 feet wide, so that no expense would be incurred by renewing in a couple of years' time, though probably a width of 6 feet would have been ample for two years at least.

Now, a few remarks as to the soil used will, I think, not be without interest to Journal readers, though in all probability the compost will not suit the tastes of all Grape growers; but in this case I hope they will criticise soundly and practically for the mutual benefit of myself and other readers. The soil round this part of Essex is far from my ideal of a good Grape producing loam; but I had no alternative to using that close at hand from a pasture laid down about fifteen years ago, and on which no manure had ever been carted to the recollection of some old hands. The turf was ploughed to the depth of 2½ inches, and forty loads of about one square yard each carted to a spot close to the vineries. This soil was roughly chopped up and put ridge shape as the work proceeded to facilitate its being easily covered to keep off the rain. To the forty loads of soil were added eighty wheelbarrowfuls of mortar rubbish, forty of burnt garden refuse, also thirty bushels of 3-inch charcoal, and one ton of Bentley's Vine border compound, which is apparently largely composed of half-inch bones, hoofs and horns. The whole heap was carefully mixed. Four wheelbarrows were used in taking it to the place where the border was to be made, and by filling them from both ends of the heap, and shovelling the compost out of the barrows, working backwards and forwards, the whole length of the borders, it was equally distributed. As the second vinery will contain mostly Muscats, 3 bushels of charcoal were reserved and added to this border as the work of filling proceeded. Each layer of soil was made firm, and there was the exact quantity for filling the two borders—viz., 60 feet by 9 feet, to a depth of 2 feet 3 inches—thus allowing 6 inches for top-dressing near the Vines, and more at the front, as the border was sloped somewhat.

The Vines were purchased in pots in November, and pruned the first week in December to within 3 feet of the base, but although kept cool the young canes bled profusely. After trying various remedies to stay this loss of sap without success, I procured some painters'

knotting, which, after three applications, checked and finally stopped it. This knotting seemed to securely seal the pores of the wood. The first week in this month the Vines were shaken out of the soil in the pots, and the roots carefully disposed in the new borders, and the shortened canes passed through small openings 4 feet apart in the brick wall, and tied to the first wire inside the house. The buds on these young canes are now swelling; those at the top part will be rubbed off as they attain 1 inch in length, and a bud on each cane will be selected that just reaches the top of the inside front stage, or, in other words, 18 inches from the base. This method answers my case admirably. It would have been folly to have pruned the young canes to within two eyes of the base, as the young growth would have been made in partial darkness. The Vines would have been planted earlier had the weather permitted.—A. J., *Moor Hall*.

Auriculas.

THE meeting of the Royal Horticultural Society at the Drill Hall on April 24th will be associated with the annual show of the National Auricula Society in the South, and is naturally being looked for by lovers of spring flowers with much interest, because that charming family of plants Primulaceæ is invariably widely represented at the meeting. Primarily the chief attraction will be found in the Auriculas. It does not say very much for the labours of the society that for the past two years the show has not exhibited the high quality seen some years since in its Auriculas. That the shows have lost much in the absence of some northern growers there can be no doubt, and it is equally certain that in the varieties of Auriculas staged there is no advance in quality also.

Practically the Show Auricula stands still. It seems incapable of improvement or development. Certainly a perfect flower as seen in the best varieties is the most remarkable of all floral combinations that florists have created, but the power of the florist seems incapable of further expansion. Then the Show Auricula is too much the creature of artificial production. Probably at the present moment of writing hardly an intending exhibitor but has his plants in warmth, for Nature is slow this season, and plants in cold frames or houses will not bloom until some time later, and plants outdoors, where the Auricula seems to be most at home, will be nearly a month later to bloom.

The beautiful varieties classed as border Auriculas, however, and which flower so profusely and for many years outdoors, have no attraction for the exhibiting grower of Auriculas. His plants, indeed, hardy as they presumably are, would make almost as poor a show outdoors as Cinerarias or Chinese Primulas. They need much protection sometimes, as now, some warmth, and not a little coddling. Of all plants grown to give pleasure that produce flowers, few give less show in the way of bloom than do Auriculas; indeed a year's constant attention and careful culture seem poorly repaid by some three weeks of bloom. One reason for this short period of florescence is found in the practice of reducing the flower stem to one generally on a plant, and in thinning down the pips to quite a few, that when the plants are presented for exhibition the whole of the few pips forming the truss may be open at the same time.

In the case of Alpines—and these seem to present greater general attractions to the public than do the choicer and even more delicate Shows—more than one truss of bloom is permissible; but even with these late buds are usually removed, that each truss may seem alike in development. With so much that is quite artificial, in association with what is a beautiful and naturally very hardy flower, it does seem a pity that the National Society should do nothing to encourage the hardy border varieties, which do so much in May when well grown to make gardens attractive. A few prizes offered for these in pots would be useful, but in such case, to be in bloom so early as the 24th of April, they too would have to be pushed on in gentle warmth.

For that reason it would be so much better could a couple of classes be established for hardy border varieties in pots, not exceeding 6 inches in diameter, for the first meeting in May, as by that time most of the plants might be in bloom, or would need very little assistance to get them into flower. It seems probable that border Polyanthus will not be seen at their best this year so early as the 24th, for these never look better or fresher than when lifted from the open ground direct into pots and brought to the show. Few plants suffer more or become drawn and out of character or colour and freshness when put into warmth under glass than these Polyanthus do. Hence it is that so many of the plants seen at the Drill Hall look poor and drawn when compared with outdoors stock.—A. D.

A NEW PARK FOR PHILADELPHIA.—It is largely owing to the exertions of Mr. Thomas Meehan that the City of Philadelphia has secured the dwelling and part of the grounds that belonged to James Logan, who, with William Penn, founded the State of Pennsylvania. The estate will be known as Stenton Park.



Corylopsis.—A common failing among many of the earliest of our shrubs is their inability to withstand a sharp night's frost when in flower. The subject of this note is among the number of genera which exhibit this shortcoming; yet when a plant of either of the species is seen at its best it commands a large amount of attention. To be sure of saving the flowers a few plants should be lifted and put in a cool house or frame from which frost is excluded. Early in March they will commence to flower and form most useful plants for decoration of room or conservatory. There are several species, but two only can be obtained in quantity. Those are *C. pauciflora* and *C. spicata*. The first named is a good example of bad naming, as it is one of the most profuse flowering plants imaginable. The flowers are primrose yellow and borne in drooping catkins of two or three flowers, each from every bud on the previous year's wood. Altogether it makes a charming picture. *C. spicata* is a stronger, stiffer growing plant, bearing catkins, often 3 inches long, of yellow flowers with prominent red anthers. Both are Japanese plants.—W. D.

Sphaeralcea abutiloides.—There are large numbers of very beautiful flowering plants included in the *Malva* family which are well known in gardens; the one under notice, however, is seldom seen. It is a native of the Bahamas, and is one of the oldest of our indoor exotic plants, having been introduced nearly two centuries ago. If left alone it makes a tall, straggling plant, with a few leaves, the branches being terminated by large heads of flowers. If, however, when young, it is kept well pinched, four or five good shoots may be had which will each bear a large quantity of blossom. The leaves are very like those of the *Abutilon* in shape, but are whitish, through the presence of a large quantity of downy hairs. The flowers are rose-coloured, 1 to 1½ inch across, and produced several together on fairly long stalks from each leaf axil near the apex of the shoot. Its usual flowering period is summer, but by starting late in the spring and keeping well stopped, it may be had in flower in March, a time when indoor flowers are more appreciated. Capital little pot plants 9 inches high bearing large quantities of flowers may be had by rooting cuttings in July and growing them in 4 or 5-inch pots through the winter. An intermediate temperature, and a compost similar to that used for *Abutilons*, will suit its requirements.—R. G. K.

"The Flora of Mount Kosciusko,"—Such was the title of a lecture given in Sydney by Mr. J. H. Maiden, Director of the Botanic Gardens of that city. The highest mountain in Australia does not boast of flowers which may be termed showy, but many of them possess a beauty and a sweetness particularly their own, so that it did not seem an exaggeration to call them gems. Vegetation on the mountain ceased at an altitude of 6500 feet. For some distance only one kind of tree was seen, the Snow Gum (*Eucalyptus coriacea*), and it gradually diminished in size. Above were wind-swept plains, plentifully bestrewn with dwarf shrubs and tiny herbs. These plains are dotted over with granite masses, in the interstices of which a number of interesting plants thrived in addition to those found in the more open country. By far the greater number of the flowers were white in colour, yellow ranking next. There was only one plant bearing a blue flower—namely, *Dianella tasmanica*. Red flowers seem to be entirely absent from the plains. That was different from what obtained in the Alps of Europe, where flowers of many colours were represented in a space little more extensive than a hand's breadth. Not many plants on Kosciusko exhaled perfumes. Excluding the few *Rutaceæ* and *Myrtaceæ*, whose leaves only emitted an odour when crushed, the notable perfumes appeared to be confined to the genera *Epacris* and *Stackhousia*. Some specimens of the former on the mountain exhaled a most powerful odour of cloves, which was observed at long distances from the blossoms. A powerful and sweet perfume was emitted from the little mats formed by the *Stackhousia pulvinaris*, a yellow flowering plant. Many of the plants exhibited a dwarfing in size. Less than half a dozen Ferns were found. There were no epiphytal Orchids, and only few terrestrial ones. A number of the plant-gems should be transferred to the rockeries and other places in the colder parts of the colony.—("Indian Gardening.")

Gardeners in the Olden Time.—The following may be interesting, as illustrative of the manners of the gardeners of the olden time. In 1345 (19 Edw. III.) "the gardeners of the earls, barons, and bishops, and of the citizens of the city of London" petitioned the mayor, John Hammond, that they might "stand in peace in the same place where they had been wont in times of old, in front of the church of St. Austin, at the side of the gate of St. Paul's Churchyard, there to sell the garden produce of their said masters, and make their profit." But the mayor, finding that "the scurrility, clamour, and nuisance of the gardeners and their servants there selling pods, Cherries, vegetables, and other wares to their trade pertaining daily, disturbed" the priests in the church of St. Austin, as well as the reputable inhabitants, ordered that henceforth the gardeners "should have as their place, the space between the south gate of the churchyard of the said church and the garden wall of the Friars Preachers (Black Friars) at Baynard's Castle."

Garden Edgings.—The mention of old gas piping, in the note on page 298, as posts for wire fencing, reminds me of another way in which it can be utilised, and where it proves very neat and serviceable—namely, as an edging to garden paths. When I took my present charge some eighteen years ago the Box edging in the kitchen garden was in such a state as to be practically useless. Tiles were first suggested as a substitute, but as the time of fixing, labour, and cost of material were all considered, and there were something over 1200 yards to be done, I decided to employ old 1-inch gas piping, of which a considerable amount could be purchased cheaply, and which could be fixed in quite one-twentieth the time. The ground having been levelled and made firm, the lengths were laid in position, joined together by round blocks of wood inserted in the ends, and the whole made firm with neat iron staples driven in at intervals, made flat at the top, and with round sides sufficiently long to get a firm grip.—A. G. B.

Rhododendron Shilsoni.—A large specimen of this was presented to Kew in 1898 by the raiser, D. H. Shilson, Esq., of Tremough, Cornwall, and is now flowering grandly in the Himalayan house. A hybrid between two of the showiest Himalayan species, *R. Thomsoni* and *R. barbatum*, it inherits good qualities from both. The Kew plant is 9 feet high, by the same in diameter. The leaves are about the same in size and colour as those of *R. Thomsoni*, but have not the blunt apex of that species, inclining rather to the more pointed termination of *R. barbatum*. The flowers are blood red, and borne twelve to eighteen together in the conical compact truss of *barbatum*. In size they are much larger than those of *R. barbatum*, and possess the waxy texture of *R. Thomsoni*. The chief defect of the plant is its earliness of flowering, for although perfectly hardy, the flowers are apt to be injured by late spring frosts in the more northern counties. In the south-west of England it is considered one of the very best of outdoor hybrids.—KEWITE.

Early Seed Sowing.—I have often met with gardeners, though chiefly of the amateur element, who like to boast that they have sown seeds, planted Potatoes, and done many things a month before sensible practical gardeners would do so. That may seem odd cause for boasting, but the weaknesses of human nature descend even so low as that. It is just possible that the present season, I can hardly term it "spring" yet, will serve to open the eyes of some who want teaching as to the worthlessness of such early sowing, whilst soil is cold, and possibly wet, the sky is sunless, and the air cold and cheerless. As between sowing seeds in March and April, there can be no doubt but that in securing better germination and quicker and more robust growth the latter month has the advantage. I have heard this season so many remarks as to the long time seeds have taken to germinate. The fault does not lie in the seeds, for last year's produce was of the very best. It lies rather in the committal of the seeds to soil that is yet so incapable of promoting growth, and with an atmospheric temperature that is wintery in character. The hardiest and earliest of seeds to make growth in the spring time are those of weeds, yet I have not seen growth on these yet. Early sowing has been aided no doubt by the admirable condition of the soil generally for their reception except on stiff clays, and thus many persons have been tempted to sow too early. A few mild open days in March naturally tempt men to get in many crops, but almost ere committed to earth cold again returns with sharp frosts at night, and possibly keen north or east winds, hence the early sowing finds no gain. Happy are those gardeners who have plenty of movable frames at their disposal, as then so many things can be raised quickly that would, in the ground outside, simply linger in the soil or perhaps die.—A. D.

Subtropical Bedding.

IN addition to the plants already enumerated in my previous notes (page 290), there are many perennial ones which are indispensable when the work is carried out on a large scale, as lofty Palms and Tree Ferns, towering above other plants of bold appearance, are needed to give a truly tropical effect. It is, however, only in public parks or large gardens that this noble style of bedding can be carried out in a thoroughly comprehensive way, for a great amount of space is needed to show off prominent specimens to advantage, and give due proportion to the whole arrangement.

Unfortunately the majority of the lofty plants suitable for the purpose need the protection of a greenhouse during six months of the year, and are therefore not within the reach of those who have no structures of sufficient size to winter them in. In such instances good use should be made of plants which are hardy. One of the most striking for the purpose is the Great Reed (*Arundo Donax*). If planted in deep rich soil it will produce strong reeds from 6 to 10 feet in height during one season. A plant of it forms a capital centre for a large circular bed, to be filled in with Cannas, Castor Oil plants, or Zeas; a broad edging of Beet, or the golden-leaved *Funkia*, gives an excellent finish to the arrangement. There are several species and varieties of *Funkias* which are perfectly hardy, and are invaluable for massing in beds or employing as edgings, as they have such bold foliage, and range in height from 6 inches to 2 feet.

Many of the Bamboos are also quite hardy, and are admirably adapted for planting to form clumps in isolated positions. Let us suppose that a series of beds or borders are arranged on grass with ample space between them, for tall striking plants. Such are ideal positions for Bamboos. Stake out a few sites at well chosen points, dig holes 4 feet in width and 3 in depth, obtain good turfy loam enriched with manure, and plant the following kinds: *B. aurea*, *B. Fortunei*, *B. mitis*, *B. nigra*, and *B. Simoni*. These will in time grow into beautiful specimens, increasing in size and height each year. As the plants throw up suckers, some of them should be removed annually to keep the plants within due bounds, and the turf must be kept clear of the main tuft and stems, to allow them to be dressed with manure annually and watered during hot weather in summertime. Two fine Bamboos for growing in pots and placing in the open air in June are *B. nana* and *B. arundinacea*.

The Pampas Grasses are also excellent hardy plants for the centre of beds, or for disposing isolated specimens on grass; in a few years they grow into wonderfully fine clumps, and their graceful foliage and feathery plumes contrast well with the many bold leaved plants used in the subtropical garden. A bed formed principally of *Azaleas* makes a striking feature, and although the plants need protection in winter, if sufficient space in a greenhouse is not at command they may be kept with safety in frostproof sheds. In my younger days I served in a garden where plants 5 or 6 feet in height were for years wintered in a shed. Some of the best varieties are *A. americana* (green leaved), *A. americana variegata*, *A. americana mexicana*, *A. Celsiana*, and *A. densiflora*. When arranging them in their summer quarters, plunge the pots in the soil of the bed, have plants of various sizes, place the larger ones at wide intervals apart, and the smaller ones here and there between, so as to form an irregular surface. *Echeveria metallica*, or *E. secunda glauca*, makes a capital edging, and *Sedum acre aurum*, if used as a groundwork for the whole arrangement, gives an excellent finishing touch. Old clumps pulled to pieces and dibbled in 2 inches apart soon grow into a compact carpet.

Those who have room to winter tall plants should grow the following—*Chamaerops humilis*, *Livistona australis*, *Dracaena Veitchii*, *Phoenix dactylifera*, *Trachycarpus excelsus*, *Musa ensata*, *M. superba*, *Cycas circinalis*, and those two fine Tree Ferns, *Alsophila australis* and *Dicksonia antarctica*. All these plants should be plunged in their pots or tubs, and be kept regularly watered. When they are disposed on lawns it is an easy matter to roll back the turf, and after plunging the pots relay the turf to within a few inches of the stems of the plants. They then look perfectly natural, and room is left for giving water. In planning out bedding of the above description advantage should be taken of any special features the garden possesses, as beds arranged near rockwork or water are particularly effective. Some shelter from strong winds, if possible, ought to be secured, as the limbs of many of the plants used are easily injured during gales. In all instances rapid growing plants should be secured to strong stakes.

Undulating ground, where it is backed up by trees or shrubberies, may by the expenditure of a little labour and ingenuity be converted into an ideal position for subtropical bedding, for when associated with winding walks, irregular borders, and grassy mounds, bold and varied plants have their characteristics more clearly defined.—H. D.

Potentilla fruticosa.

THIS is a very distinct form of *Potentilla*, as it departs from the usual low rambling or creeping types of the genus in its shrubby habit. On rockeries it succeeds admirably, forming compact little bushes from 1 to 2 feet high, covered with its neat bright yellow flowers (fig. 86), which are produced in great numbers throughout the summer months. It is occasionally found in mountainous districts of Great Britain, but is not common; and it is also found in various parts of Europe, especially in the Pyrenees. In well drained borders it grows strongly, but much the best position is the rockery, on which it is soon established, and can readily be increased by division or by seeds. *P. fruticosa* is also found in various parts of Asia, and even in America. In the latter country, however, several shrubby forms have been noted, which by some botanists have been regarded as varieties of this one, and by others as distinct species. Examples of these are found in *P. floribunda*, a North American plant; *P. parvifolia*, from the Soongarian Desert; *P. dahurica*, from Dahuria; *P. arbuscula*, *P. rigida*, *P. lignosa*, and *P. Salesovi*. The last named is somewhat of the habit of *P. fruticosa*, but is easily recognised in the leaves of *P. Salesovi* not having the same silvery appearance, and the leaflets are more sharply serrated.

An Hour at Williams'.

THE horticultural world in general, and London in particular, has seen many changes during the past half-century, and amongst the participators in all the various phases have been Messrs. B. S. Williams and Son, of Upper Holloway. From the time when the late Mr. Benjamin Williams was doing such meritorious work for horticulture, and was laying the foundation of an excellent business, until to-day, the firm has ever been to the fore. Now, under the personal direction of Mr. Henry Williams, the business in its several aspects continues its prosperity, though the lines adopted may be and probably are vastly different from those of long ago. Plants that a quarter of a century back made the name of the Victoria and Paradise Nurseries more than famous, have had to go to the wall, for fickle fashion has exalted other favourites, which will, in their turn, have perforce to languish in a practically forgotten obscurity.

Not only have men and manners altered, but establishments also have felt the touch of time. London has grown and is growing, and with its constantly widening boundaries the smoke fiend has travelled. In situations where awhile ago it was easy to grow almost any plant, it has become an almost disheartening task, for after all the skilful care many only just exist. Having this unfortunately ever increasing difficulty to contend with, the fact was forced upon Messrs. Williams and Son that if they wished to maintain their prestige they must go further afield beyond the pernicious influences of the smoke and fog. With this end in view a considerable area of ground was acquired at Finchley, where, in addition to glass structures, there was ample space for Roses, shrubs, and other hardy stock. This ought to prove a most admirable arrangement, as all kinds of plants grown there can be drawn upon for the supply of the principal establishment. A small portion of the lower portion of the home nursery has passed into the hands of the builder, but the main frontage and a large majority of the houses remain intact.

A few days ago the houses at Holloway were inspected, and it is really surprising what immense numbers of plants are accommodated in the space at command. Furnishing is a great specialty of the firm, and to meet the demands of this department alone thousands of Palms of various kinds are essential. Hence we find the large conservatory and more than one house completely filled with plants ranging from a few inches to many feet in height. Kentias by the thousand are raised at home, and, despite the space that is accorded to them, the supply is rarely or never equal to the demand. Some of the plants show signs of having had a spell in some uncongenial atmosphere, but, as a rule, they are clean, healthy, and of good shape—in fact, perfectly adapted for furnishing purposes.

The collection of Orchids is more extensive than one might suppose at first glance, and the condition of the plants reflects undeniable credit on the growers. They may not have the ruddy glow of health in the leafage that one would look for in a purely rural neighbourhood, but they, notwithstanding smoke and bad light, look hardy in the growth and firm in the bulb. Such plants as these could scarcely fail to make markedly good progress when they were taken to more suitable places in a clear growing atmosphere. Several houses are devoted to them, but it is seldom that many plants can be found in flower, as the firm's floral depôt in Piccadilly swallows up all that can possibly be supplied. This may detract somewhat from the appearance of the houses, but it is a good sign of activity in one phase of the business, and, moreover, it relieves the plants from the burden of carrying the flower spikes too

long. There are large numbers of *Laelias*, *Cattleyas*, *Cypripediums*, *Odontoglossums*, and many others in various stages of growth, some of which have proved their worth, while others have not yet had time to produce any flowers. A collection of *Laelia purpurata* was in splendid form, and the plants were throwing up large numbers of sheaths. It may be presumed that the Orchids will eventually find their way to Finchley.

For furnishing, as well as for the supply of the West End shop, forced shrubs are a necessity, and one finds that they are very largely grown. *Clivias*, or to call them by the older and decidedly longer name of *Imantophyllums*, find a certain amount of favour, but, like the *Amaryllis*, their glory, so far as the Victoria and Paradise Nurseries are concerned, has departed. At the same time, some handsomely coloured flowers of varying forms of *Clivia miniata* were noted in passing. Of the general stock of hardwooded and other plants it would be impossible, within the brief scope of such an article as this, to speak, and they must, therefore, be passed without comment. Naturally enough, in a nursery like this, to name the whole of the plants would be an almost endless task, and we will, therefore, leave it for other opportunities as they arrive in the future.—F. W. H.

The Royal Horticultural Society.

Drill Hall, April 10th.

The exhibition in the Drill Hall on Tuesday was one of the most attractive we have seen of late. Neither Orchids nor fruits were particularly numerous, but floral exhibits were abundant and of excellent quality and variety. Narcissi, owing to the lateness of the season, were less numerous than might have been expected, but these will probably be very plentiful a fortnight hence.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); the Rev. W. Wilks, and Messrs. J. Cheal, A. F. Barron, E. S. Blaker, A. H. Pearson, A. Dean, S. Mortimer, H. Markham, J. W. Bates, W. Farr, G. Woodward, G. Wythes, F. Q. Lane, J. Smith, E. Beckett, G. Bunvard, and W. Gleeson.

Messrs. J. Cheal & Sons, Crawley, staged sixty dishes of Apples in good condition. The most striking were Wellington, Chelmsford Wonder, Newton Wonder (excellent), Lane's Prince Albert, Bess Pool, Sandringham, London Pippin, Adam's Pearmain, and High Canons. Mr. J. May, gardener to J. B. Joel, Esq., Potter's Bar, staged two baskets of Potato Syon House Prolific, which were even in size and in good condition. Mr. Geo. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, sent a box of Royal Sovereign Strawberry in capital condition.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Druery, H. B. May, R. Dean, R. B. Lowe, W. Bain, J. D. Pawle, C. E. Pearson, G. Gordon, C. E. Shea, E. H. Jenkins, H. J. Cutbush, W. J. James, H. Turner, G. Paul, E. T. Cook, J. W. Barr, J. Fraser, and E. Mawley.

Messrs. H. Cannell & Sons, Swanley, staged a wonderful display of single Zonal Pelargoniums tastefully embedded in a bank of Maidenhair Fern. The exhibit was unique, for it is seldom that even the Swanley firm brings out an exhibit at this season, and, needless to say, they were grown in Mr. Cannell's well known style. The best varieties were Mrs. Hall, Lord Reay, Mrs. Simpson, Soldier's Tunic, Souvenir de W. B. Miller, Nicholas II., Chaucer, W. E. Corden, Menelik, and Crabbe. Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, arranged a large table of tinted and variegated Ferns, chiefly in small pots, massed in baskets; needless to say they were most effective. The most striking were *Blechnum occidentale*, *Pteris tricolor*, *Doodia aspera multifida*, *Athyrium Goringianum pictum*, and *Adiantums Legrandi*, *Collisi*, and *scutum roseum*; it was certainly an interesting exhibit.

Messrs. W. Paul & Son, Waltham Cross, arranged a large display of spring flowering plants in pots. The Camellias formed the chief feature, but no less pleasing were the other plants, such as *Forsythia suspensa*, *Pyrus malus floribunda Scheideckeri*, *Cytisus scoparius præcox*, *Staphylea colchica*, and *Laburnums*. The Camellias were in splendid condition, and the chief forms, such as *fimbriata*, *conspicua*, *Madonna*, *Commendatore Betts*, *Pride of Waltham*, and *C. H. Hovey* were especially noteworthy, while a number of boxes containing much the same varieties made a pretty front to the exhibit. Messrs. R. & G. Cuthbert, Southgate, arranged a handsome table of *Azalea mollis* in great variety, also well flowered plants of *Staphylea colchica* and *Magnolia conspicua* arranged with Palms and edging of *Pteris Wimsetti*. The best *Azaleas* were *Comte de Comer*, *Queen Sophia*, *Alphonse Levallee*, *Consul Pecher*, *Anthony Koster*, and *Mr. L. J. Endtz*.

Messrs. R. Wallace & Co., Colchester, staged a few choice spring flowers, consisting of *Irises assyriaca* and *I. stylosa speciosa*, *Erythronium Hendersoni*, the curious *Tulipa Kaufmanniana*, and *Fritillaria aurea* var. and *F. pudica*. Messrs. W. Cutbush & Sons, Highgate, also contributed a beautiful and odoriferous exhibit, in which the *Ericas* were chiefly noteworthy. The collection included charming decorative plants of *Erica Wilmoreana*, *E. persoluta alba*, *E. coccinea minor*, *E. Cavendishi*, and *E. candidissima*; also *Epacris*, *Boronia mega-*

stigma, *Acacia Drummondii*, *Magnolia Lenné*, *Lilacs*, and the beautiful *Cytisus Andreana*, arranged with Ferns and Palms. Mr. G. W. Piper, Uckfield, exhibited two bamboo stands full of Sunrise Roses. This variety is now well known and needs no description. The buds were beautifully coloured and fresh.

Messrs. F. Cant & Co., Braiswick Nursery, Colchester, staged boxes of superb Roses, chiefly Teas, in capital condition. The blooms were large, fresh, and bright in colour. The best Teas were *Madame Hoste*, *Medea*, *Ethol Brownlow*, *Cleopatra*, *Innoconte Pirola*, *Madame de Wattville*, and *Souvenir de Catherine Guillot*; while the Hybrid Teas included good flowers of *Danmark*, *Rainbow*, *Carolino Testout*, and *Marquis Litta*, with a few Hybrid Perpetuals; the flowers were well arranged, and the exhibits worthy of Colchester. Mr. Geo. Mount, Canterbury, staged a beautiful exhibit of Roses, which included boxes of blooms staged in the orthodox style, and a quantity arranged in vases with long stalks, most handsome in appearance. The boxes



FIG. 86.—POTENTILLA FRUTICOSA.

contained good examples of *Prince Arthur*, *Mrs. W. J. Grant*, *Bridesmaid*, excellent *Catherine Mermet*, *Captain Hayward*, *Mrs. John Laing*, and *Niphetos*.

A collection of *Azalea mollis*, chiefly seedlings in various shades of yellow, were staged by Mr. J. Russell, Richmond Nurseries, Richmond; the plants were full of bloom and naturally attractive. The same firm also contributed a group of hardy flowering shrubs, such as *Viburnum opulus*, *Rhododendron Cunningham's White*, *Laburnums*, and *Andromeda speciosa*—an effective exhibit. A large table of cut *Rhododendron* blooms came from Mr. R. Gill, gardener to D. H. Shilson, Esq., Tromough Gardens, Penryn, Cornwall, all grown in the open air; such a display makes one long for our own spring to appear. The varieties chiefly to be noted were *R. Edgworthi*, *R. Shilsoni*, *barbatum*, and a large variety of good seedlings. The display was much appreciated by the visitors.

Messrs. B. S. Williams & Son, Holloway, arranged a fine group of spring flowering plants in pots, also foliage plants, the double Thorns, *Lilacs* in variety, the old *Kerria japonica*, *Spiræa confusa*, and a pretty collection of *Azalea mollis*, arranged with *Acers* in variety. The whole formed one of the most effective displays seen for some time at the Hall. Messrs. Paul & Son, Cheshunt, had the privilege of staging their exhibit in a very bad light, which effectually destroyed its beauty. The Roses included plants of *Paul's Carmine Pillar*, *Miss Ellen Willmott*, *Madame E. Cauvin*, and *Madame Berkeley*, a few good seedling *Hippeastrums*, and some pretty rock plants, such as *Hepatica angulosa*, *Aubrietia purpurea*, *Saxifraga atropurpurea*, and *Sisyrinchium grandiflorum album* in pans were pretty.

An interesting table of alpine plants was staged by Mr. P. Purnell, Woodlands, Streatham Hill. The Primulas, Scillas, Gentianas, and Ericas provided the flowering plants, while Sempervivums in variety were equally interesting and varied. Messrs. J. Peed & Son, Roupell Park Nurseries, West Norwood, staged a semicircular group of Clivias, with a few other spring flowering plants, edged with *Pteris cristata*.

Messrs. Barr & Sons, Covent Garden, made a bright display with Daffodils effectively arranged on one of the side tables. Such varieties as Horsefieldi, Madame de Graaff, Grandis, Mrs. Langtry, Gloria Mundi, Glory of Leiden, Ellen Barr, and Mrs. Walter Ware, were tastefully set up in glasses, and other varieties were represented in pots. The same firm also showed flowers of *N. Poetaz*, a cross between *N. Poeticus* and *N. Tazetta*. Mrs. Kendall, Newton Poppleford, Devon, showed flowers of the beautiful *Narcissus King Alfred*, which was granted a F.C.C. in 1899. Messrs. G. Jackman & Son, Woking, sent a collection of Daffodils and other hardy flowers; Emperor, Golden Spur, Sir Watkin, Maximus, and Henry Irving were conspicuous among the former. Very effective was the Irish exhibit of Daffodils sent by Miss Curry, The Mall House, Lismore. A large number of varieties were represented, including Marchioness of Lorne, Autocrat, Victoria, Scoticus, Thomas Moore, John Bain, Sir Watkin, Horsefieldi, Princess Ida, Edward Hart, and Emperor (the Barr silver cup).

ORCHID COMMITTEE.—Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. J. O'Brien, de B. Crawshay, H. Ballantine, H. Little, F. Sander, J. T. Gabriel, H. J. Chapman, H. A. Tracy, W. H. White, J. Jaques, E. Hill, J. Coleman, R. B. White, C. J. Lucas, W. H. Young, H. T. Pitt, and Jas. Douglas.

Messrs. F. Sander & Co., St. Albans, contributed a small group of Orchids, in which *Dendrobium Phalaenopsis Schröderianum*, *D. lituifolium*, *Miltonia vexillaria*, *Odontoglossums* and *Cattleyas* were conspicuous. De Barri Crawshay, Esq., Sevenoaks, exhibited a number of *Odontoglossums*, including forms of *crispum* *Andersonianum*, *Rossi*, and others. Mr. C. Kench, gardener to J. S. Moss, Esq., Bishop's Waltham, showed a good form of *Odontoglossum crispum*. Mr. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, arranged a small group of Orchids. There were *Cattleyas*, *Odontoglossums*, and others in fine variety.

Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, staged a beautiful collection of Orchids. *Dendrobiums* were very handsome, as were *Cattleya Schröderæ*, *Phalaenopsis Sanderiana*, *Lælia Olivia*, *Odontoglossums*, *Cypripediums*, and *Epidendrum Stamfordianum*. Messrs. J. Veitch & Sons, Ltd., Chelsea, exhibited *Lælia Digbyano-purpurata fimbriata*; *Epidendrum Clarissa*, *Dendrobium Cordelia album*, *Cattleya Eros*, *C. Rosalind superba*, *Cypripedium J. Gurney Fowler*, *Dendrobium Wardianum japonicum*, and *D. Sosius*, a handsome hybrid from *D. nobile* and *D. splendidissimum*.

Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, staged *Dendrobium aureo-Wardianum*, *D. superbum Huttoni*, *D. superbum*, *D. nobile Murrhinianum*, *D. Rolfeæ*, *Polystachya laxiflora*, *Lælia flava Cowani*, and others. A few other Orchids were contributed in smaller numbers by various growers.

MEDALS.—*Floral Committee*.—Silver Flora medals to Messrs. H. Cannell & Sons, R. & G. Cuthbert, B. S. Williams & Son; silver-gilt Flora medals to Messrs. H. Shilson and G. Mount; silver-gilt Banksian medals to Messrs. W. Paul & Son and F. Cant & Co.; silver Banksian medals to Messrs. P. Purnell, J. Hill & Son, and J. Russell. *Fruit Committee*.—Silver Knightian medal to Messrs. J. Cheal & Sons. *Narcissus Committee*.—Silver Flora medal to Messrs. Barr & Sons. *Orchid Committee*.—Silver Flora medals to Messrs. H. T. Pitt and W. H. Young.

Certificates and Awards of Merit.

Amaryllis Titan (J. Veitch & Sons).—A handsomely formed flower; the colour is pure white, with crimson rose on the upper segments (award of merit).

Amaryllis Zephyr (J. Veitch & Sons).—The colour of this is bright scarlet, with white on the margins (award of merit).

Azalea Mrs. A. E. Endtz (R. & G. Cuthbert).—This is a superb form of *mollis*; the flowers are a peculiarly rich orange yellow (award of merit).

Azalea Duchess of Wellington (R. & G. Cuthbert).—A very attractive Ghent variety. The colour is pale blush, with bright red on the upper portion of the flower (award of merit).

Azalea Madame de Smet (Paul & Son).—This is almost a white, with yellow on the upper portion (award of merit).

Batemannia Burti, *Pitts* var. (H. T. Pitt).—A superb form with varnished green tips to the white organs (first-class certificate).

Cattleya Rosalind superba (J. Veitch & Sons).—A beautiful variety. The sepals and petals are rose, and the lip rich deep crimson. The throat is golden yellow (award of merit).

Cattleya Schröderæ, *Pitts* variety (H. T. Pitt).—A superb variety, with delightfully fragrant flowers. The sepals and petals are soft rose, and the lip is crimson with a rose margin (first-class certificate).

Cypripedium J. Gurney Fowler (J. Veitch & Sons).—This is a cross from *C. barbatum* *Crossi* and *C. Godefroyæ*. The prevailing colour is mauve, paler on the pouch (award of merit).

Epidendrum Clarissa (J. Veitch & Sons).—This is a hybrid from a cross between *E. elegantulum* and *E. Wallisi*. The sepals and petals are purple rose, and the lip purple with a white margin (award of merit).

Jonquil Campernelle (W. Mauger & Son).—A handsome double form of a well known flower (award of merit).

Lælio-Cattleya intermedia Fowler's variety (J. Davis).—This is a supposed natural hybrid. The sepals and petals are soft rose. The front portion of the lip is deep crimson, and the side lobes soft primrose. The throat is blush white (first-class certificate).

Narcissus Alma (Rev. G. H. Engleheart).—A pure yellow variety with a broad spreading perianth (award of merit).

Odontoglossum luteo-purpureum Mossi (de B. Crawshay).—A grand variety. The yellow of the sepals and petals is almost obscured by brown. The front portion of the fimbriated lip is pure white, while the base has brown spots (award of merit).

Phalaenopsis Lady Rothschild (H. Low & Co.).—This is a hybrid from *P. intermedia Brymeriana* and *P. Sanderiana*. The sepals and petals are white tinged with purplish rose; the lip is rose (award of merit).

Polemonium confertum Melittum (J. Jackman & Son).—A dwarf growing plant with pure white tubular flowers (award of merit).

Pyrus Malus angustifolia fl.-pl. (no name).—A strikingly handsome variety with very large, soft rose coloured flowers (award of merit).

Rhododendron H. Elliott (H. & J. Elliott).—A deliciously fragrant pure white variety that should become popular (award of merit).

Rhododendron Shilsoni (D. H. Shilson).—A superb hybrid; see description page 311 (award of merit).

Rose L'Innocence (Paul & Son).—This is a creamy white hybrid Tea of good form (award of merit).

Horticultural Shows.

The Royal Caledonian, April 4th and 5th.

THE extremely unfavourable weather experienced during the whole of the present year found its reflection in the falling off in entries at this, at one time called the Hyacinth show. Fortunately there was no declension in the quality of most of the produce shown. Azaleas and forced plants generally, as well as cut Roses, Apples, and Daffodils, being, perhaps, better than usual. The greatest want of quality was apparent in Hyacinths, in vegetables, and in a less degree in Tulips, all of which were decidedly below the average.

In the plant classes for gardeners, Mr. McIntyre, gardener to Sir Charles Tennant, The Glen, and Mr. Wood, gardener to James Buchanan, Esq., Oswald House, were the only exhibitors of a circular table of plants, the former securing the first prize with a bright arrangement of *Dendrobium nobile* vars., *Hippeastrums*, *Cyclamens*, and forced plants. The latter was second. For a table of Orchids only two again entered, Mr. Mitchell, gardener to J. Wilson, Esq., Bantaskin, Falkirk, being first, and Mr. McIntyre second. Some fine Orchids were shown in the classes devoted to these plants. For four distinct, Mr. Nicoll, gardener to T. Roy, Esq., Craigclowa, was awarded first, a fine example of *Oncidium sarcodes* being noteworthy. Mr. McIntyre was second, a specimen of *Cymbidium eburneum* being well flowered. For one Orchid, with a large specimen of *Cymbidium Lowianum*, Mr. Wood secured first. As already indicated, Indian Azaleas were large and profusely bloomed. Mr. McIntyre secured first prizes for three and one specimen plant. For the former Mr. Bald, Canaan House, was a good second, and Mr. Wood third; Mr. G. Chaplin, gardener to Mrs. Nelson, St. Leonard's, with well bloomed examples, getting first in the class for four in 9-inch pots.

For ten, and also for six forced plants in bloom, Mr. McIntyre was again to the fore with large specimens, and also second for four stove or greenhouse plants in flower, Mr. McCartney, Liberton, securing first for these. Three large and handsome specimen Ferns were shown by Mr. J. H. Pearson, Murrayfield, for first prize in that class. Among other noteworthy exhibits were nine *Cyclamens* from Mr. McIntyre; six *Cinerarias* from Mr. G. Wright, Musselburgh; *Lily of the Valley* from Mr. G. Shearer, Annan; and *Primula obconica* from Mr. Wright, gardener to Lord Breadalbane, Taymouth Castle, a first-class certificate being afterwards voted to this variety; plant dwarf, truss large, colour a shade of pink.

The best twelve, and also the best six pots of Hyacinths were staged by Mr. I. Meiklem, Johnstone; Mr. Brydone, Innerleithen, being second for the first-named, and Mr. Laurie, Crammond, for the second. In a large class Mr. Brydone secured first for six pots Tulips, Mr. A. M'Innes, Musselburgh, a like award for six *Polyanthus Narcissus*, and for an equal number of garden *Narcissus* Mr. Bald was first. These were fine. In the nurserymen's section the Hyacinths were much better than in that of the gardeners. Mr. Campbell, Gourrock, was the only exhibitor for twenty-four, and was worthily awarded first prize. The same exhibitor secured first for six pots Tulips, Mr. Downie, 144, Princes Street, being a good second. Mr. Downie also secured

most of the other prizes for plants in the trade section, including Azaleas, forced shrubs, and decorative plants.

The cut flower section was not extensive. A cup offered by Mr. Barr for a collection of Daffodils brought only one exhibitor, no doubt owing to the late season, and the cup was withheld, a second prize only being awarded. The cut Roses, however, brought out a spirited competition, and were exceptionally excellent. For twenty-four blooms Mr. Manson, gardener to H. Gillon, Esq., Wallhouse, was an easy first. Mr. Armstrong, gardener to Dr. Scott, Musselburgh, second, and in the class for twelve blooms the same exhibitors held a like position, though it was a very close run. The finest blooms were Maréchal Niel, Caroline Testout, Niphetos, Devoniensis, Souvenir de S. A. Prince, La France, and Francisca Kruger. Mr. Pearson, gardener, Beechwood, secured first for twelve Maréchal Niel set up in tubs. Some charming examples of bouquet making and buttonholes were also shown.

In the fruit section Mr. McIntyre was the sole exhibitor of Pine Apples. Two exhibitors showed Grapes—good Lady Downe's—Mr. Smith, Oxenford, being first, and Mr. Kidd, Carberry Tower, second. Mr. McIntyre was first for six pots of Strawberries, and Mr. Galloway, Liberton, second, and again for a dish of Strawberries Mr. McIntyre repeated his success with fine Royal Sovereign. Mr. Smith second with Vicomtesse H. de Thury. The finest culinary Apples were staged by Mr. McKinnon, gardener to Earl Cowper, Wrest, Amptill, Mr. Day, Galloway House, having first for dessert varieties. Apples were fine, well kept, and nicely coloured. Gooseberry, Bismarck, Blenheim Pippin, Blue Pearmain, Hormead Pearmain, Prince Albert, Scarlet Pearmain, and Gloria Mundi being the varieties in the several collections of outstanding merit. An attractive looking variety under the curious appellation of Desse de Buff was shown by Mr. McKinnon, Wrest Park.

Handsome groups of forced plants were arranged by various nurserymen. Mr. Downes having a capital display, mainly composed of forced shrubs, such as *Staphylea colchica*, *Prunus triloba sinensis*, *Cytisus* and *Azalea mollis*. Messrs. R. B. Laird, Pink Hill, had an equally attractive composition, and Messrs. Methven & Sons, Leith Walk, and Messrs. Cunningham, Fraser & Co., Comely Bank, had also attractive arrangements.

Mr. Jones, Lewisham, contributed a table of cut Daffodils in great variety, and also cut Tulips; whilst Messrs. Barr & Son sent from Long Ditton a handsome lot of Daffodils, including some of the newer forms. From Mr. Wright, Taymouth Castle, came a selection of cut trusses of his improved strain of *Primula obconica*, and to these an award of merit was deservedly voted. Mr. McMillan, gardener to Mrs. Carrie, Trinity, arranged a small table with trusses of hybrid Indian *Rhododendron* seedlings, which attracted great attention. As none of them was named the collection as a whole secured an award of merit. Dr. Stewart McDougall had on exhibition a case of insects destructive to vegetation.

Liverpool, April 4th.

St. George's Hall presented a delightful scene to the public on Wednesday last, when the committee of the Liverpool Horticultural Association opened their fourteenth spring show. It was indeed a surpassing ensemble of gorgeous colouring, such as we can only get from the wonderful ranges exhibited in our spring flowers. Ever alive to cater for its subscribers (and after the somewhat poor appreciation of the general public of last Wednesday's show, the subscribers must more than ever be studied), the committee had to give up the popular summer show in favour of the spring show. The show has ever been well regarded by the trade, and this year no less, for many specially interesting exhibits grouped in an admirable manner on square tables occupied the centre of the floor.

Here stood some splendid *Amaryllis* from Messrs. R. P. Ker & Sons, which seemed to take the fancy of the ladies. Also Lilacs, double and single, of many shades; whilst Azaleas of the indica and mollis section showed conspicuous blooms. Messrs. T. Davies & Co. exhibited a charming group of *Acers* in a setting of miscellaneous bulbs, Azaleas, and Genistas handsomely arranged. Especially noteworthy was the exhibit of Messrs. Dicksons, Limited, of Chester, with a most extensive and beautifully arranged stand of *Narcissi*. The trade exhibits ended with the noted Edwardian ware and the clever work in leaf skeletonising from Mrs. Hodgkins, which obtained certificates.

Turning to professional exhibits, many handsome plants were noted, the leading exhibitor being Mr. J. Bracegirdle, gardener to Alderman W. H. Watts, Elm Hall, Wavertree, his group of flowering and foliage plants being characterised by much artistic merit. His miscellaneous bulbous and flowering plants also denoted good culture. Close to him came Mr. T. Gowen, gardener to G. A. Bartlett, Esq., Lynton Lodge, Mossley Hill, who was followed by Mr. E. R. Finch, gardener to Joseph Smith, Esq., Newstead, Wavertree, and Mr. G. Eaton, gardener to W. H. Shirley, Esq., Allerton House, Allerton, with ten hardy and bulbous plants. Hyacinths were extensively staged. The most attractive were those grown three in a pot. Mr. T. Wilson, gardener to O. H. Williams, Esq., gained another most decisive success for arrangements of twelve, six, and three bulbs in a pot, all having fine spikes. Next to these came Messrs. E. R. Finch and G. Leadbeater, gardener to W. J. Davey, Esq., Homeleigh, Grassendale. Tulips

also showed up well, Mr. T. Wilson again taking the lead, with Mr. F. Keightley, gardener to Mrs. Duncan, Grassendale, an excellent second. Mr. J. V. Thompson, gardener to W. P. Sinclair, Esq., Sefton Park, accounted for the prizes for six single, six double, and six *Polyanthus Narcissus*. Mr. E. R. Finch took the first prize in Azaleas, whilst the *Amaryllis* from the same source were very handsome. They were rivalled, however, by those staged by Mr. Keightley, whilst Mr. Bracegirdle took the prize for greenhouse plants. A pretty pale-flowered variety of *Cymbidium Lowianum* gained Mr. G. Eaton the stove plant prize.

The Orchid classes were well represented. Mr. Bracegirdle again led with three plants—one a splendid specimen of *Angraecum sesquipedale* carrying fifteen flowers and buds. Mr. C. Duke, gardener to F. Cross, Esq., Grassendale, showed two fine cool Orchids. Hardy Azaleas and *Rhododendrons* occupied much space, many being shapely and abundantly flowered. Mr. W. Bustard, gardener to T. McLelland, Esq., Aigburth, took honours for Azaleas, *Rhododendrons*, *Azalea mollis*, and one bouquet; Mr. Bracegirdle for six forced hardy plants and four distinct *Azalea mollis*, Ferns, Palms, and some fine Callas. The *Cyclamens* of Mr. J. Heaton, gardener to R. P. Houston, Esq., M.P., looked well; as did table plants from Mr. T. Carling, gardener to Mrs. Cope, Woolton. *Cinerarias*, *Primulas*, and *Freesias* were very moderate. From a show point the exhibition was distinctly good, and the labours involving such were ably carried out by a useful committee, headed by Mr. T. Foster (chairman), Mr. Mercer (vice-chairman), and Mr. Harold Sadler, the genial secretary.

Royal Botanic Society, April 11th.

THE spring show of this society was held in the society's gardens, Regent's Park. The competition was exceedingly poor, but the trade exhibits made a brave display, and were a capital show in themselves.

There was a good competition in the class for twenty-four *Cyclamens*, and Mr. G. Bowles, Church Road Nursery Co., Hanwell, secured first prize with some capital plants. The St. George's Nursery Co., Hanwell, was second. Messrs. A. W. Young & Co., Stevenage, won the first prize for twelve *Cinerarias* with moderate plants, followed by Mr. T. Abbot with still weaker plants. Mr. Geo. Kelf, gardener to Mrs. Abbot, South Villa, Regent's Park, was the only competitor for twenty-four pots of Tulips, which were of medium quality. For twelve pots Mr. G. Kelf was again to the fore with a better display; while Mr. H. Abbot, gardener to C. Newington, Esq., Regent's Park, was a good second.

For twenty-four pots of Hyacinths, Mr. G. Kelf was first with good spikes of King of Blues, Macaulay, gigantea, and La Grandesse. The same exhibitor was also placed first for twelve pots, followed by Mr. T. Abbot. For six table plants Mr. G. Kelf was first with good *Dracaenas* and *Cocos Weddelliana*, and Mr. T. Abbot was second. For six *Azalea mollis* Mr. Kelf was first with six good plants. There were two competitors for the groups of flowering and foliage plants, Mr. Geo. Kelf being again successful. Mr. T. Abbot was second with a more formal arrangement, though the flowering plants employed were good.

Messrs. J. Peed & Sons, Norwood, staged a table of spring flowering plants, such as Lilacs, *Clivias*, *Azalea mollis*, and *Viburnums*, arranged with Ferns. Messrs. R. & G. Cuthbert, Southgate, had a fine display of *Azalea mollis*, arranged with Palms and Ferns. Messrs. W. Cuthbush and Son, Highgate, staged a large collection of *Ericas*, Lilacs, *Magnolia Lenne*, and *Epacris*, with a groundwork of Ferns and Palms. Messrs. Barr & Sons, Covent Garden, arranged a fine collection of Daffodils, *Anemones*, *Scillas*, *Iris*, *Hepaticas*, and *Fritillarias*.

Messrs. W. Paul & Son, Waltham Cross, staged a large collection of *Camellias* in pots, also boxes of cut blooms, with a few other spring flowering plants. A few *Pyruses*, *Cytisuses*, and Lilacs gave delicacy to the group. Messrs. B. S. Williams & Son, Upper Holloway, staged a good bank of spring flowering plants, such as Lilacs in variety, *Azalea mollis*, *Rhododendrons*, and *Crataegus* arranged with variegated Maples, which gave them a good effect. Messrs. J. Laing & Sons, Forest Hill, contributed a display of *Dracaenas*, Palms, *Asparagus Sprengeri*, and Ferns, with *Clivias*, *Ericas*, Azaleas, *Cyclamens*, and *Acacias*, together with many other spring flowering plants.

Messrs. Morle & Co., Finchley Road, arranged a group of excellent *Mignonette* with a few *Genistas*, *Spiraeas*, *Ericas*, and Ferns. Mr. J. Russell, Richmond, staged a table of *Azalea mollis*, chiefly seedlings, also *Viburnums* and *Rhododendrons* in capital condition. A pretty group of alpinas was staged by P. Purnell, Esq., Streatham; the *Primulas*, *Gentianas*, and *Scillas* were attractive and bright. Messrs. F. Cant & Co., Colchester, staged five boxes of cut Roses. The Teas were especially good, The Bride, Cleopatra, Catherine Mermet, Madame Hoste, and Souvenir de Catherine Guillot being most noteworthy; the whole exhibit was fresh and bright.

Mr. W. Rumsey, Joynings Nursery, Waltham Cross, had nine boxes of cut Roses, which were bright and fresh, the blooms of Maréchal Niel and Niphetos, with Mrs. J. Laing, Magna Charta, Margaret Dickson, Mrs. Rumsey, and Général Jacqueminot being most notable. Mr. G. Bowles, Church Road Nursery Company, Hanwell, staged a fine collection of *Cyclamens*, the flowers were stout and fresh. The St. George's Nursery Company, Hanwell, also exhibited a collection of *Cyclamens* grown in their well known style.

The Young Gardeners' Domain.

Bits for the Bothy.

The Foreman. (Continued from page 254.)

THE first taste of power, though it be but a foretaste of full authority yet to come, is exhilarating to those who whilst serving are ambitious to command. The foreman's position, forming, as it does, a connecting link with that of the head gardener, is admirably adapted to the purpose of equipping a young man to rule both wisely and well. In the bothy the foreman, as such, will recognise a wider field of influence; its attendant responsibility he may possibly overlook. It is well for him to see this responsibility, and to accept it, if he will, for it is not compulsory. He may, if he chooses, selfishly take a high seat and look down upon his young comrades of the craft, to the youngest of whom the earlier steps of a good gardener's career are only as yet faltering ones. The question is, Should a foreman accept this responsibility? Is he his brother's keeper? Some may answer, "Oh! there is time enough to show my authority when I am a head gardener." It is an answer which was literally given by one young man, but in reality it is no answer at all. He was one, it may be added, who whilst enforcing obedience during working hours, was unable to command respect at any time by his utterly indifferent attitude and lack of interest in the welfare of others.

Should the foreman unsympathetically deny to his young brother that aid it is his prerogative as an elder to give, he also deprives himself of the exercise of a power which, in its moral force, would eventually be to him a tower of strength. The great lone land of selfishness is an impoverished country, and for those who choose to abide in it, it is able to starve out all that is good and noble in human nature. Oh! That each and every foreman gardener could grasp the spirit of this—these poor words, so feebly expressed; and by his courteous and dignified behaviour, by that innate acknowledgement that he is from hence his brother's keeper, wisely, consistently—aye, even nobly, complete his term of bothy service; and thus armoured, pass on and out into the great battle of life beyond. Never has been, nor ever will be, the force of example so powerful a lever, or so easily applied as it is now, for at this period of life the footsteps of those immediately in front create the deepest impressions, and are the most readily followed by young travellers in the rear.

In some cases the initial stages of the foremanship are beset with little stumbling blocks, trifles truly, but sufficient to cause small side slips it is as well to avoid. These more often occur where the position is filled from the ranks in the same bothy, and familiarity with the journeymen has merged into a little contempt for him as a foreman. In common justice, however, to the bothy, it must be said this feeling is oftener displayed by the outside department than from the inside; this, too, from old hands cynically disposed towards one whom they now regard as being "dressed in a little brief authority." Why men who are, to say the least, old enough to know better should, by presuming on long service, and perhaps a too delicate forbearance on the young man's part, try to make things as unpleasant as possible for him, is not easy to say, but is, unfortunately, a fact not so uncommon as might be supposed. That young men, themselves, are not always blameless in the matter goes without saying, otherwise it would be superfluous to broach the matter here. Some feel too acutely the dignified burden of the foremanship which is placed on their comparatively youthful shoulders, and carry it very ungracefully in their anxiety to display an authority, which may, indeed, be very limited, on every possible occasion. This is a mistake. One can esteem the aspirant who rises to the dignity of his office, but should he take a step beyond and pose for what he is not, then good taste and common sense being conspicuous by their absence, a good deal of unnecessary and unpleasant friction ensues.

As no man is deemed to be a prophet in his own country, so the foreman may, still, never be recognised or obtain his proper status until a change is made to fresh fields and pastures new. However that may be, it is a critical period of a young gardener's life, and there is no reason why he should show undue haste to take up his full commission, the doing of which might be more or less inimical to his prospects. From being a foreman in one situation, and again taking the same post in another, possibly a larger garden, many advantages are obtained. Here, in all probability, his duties will be extended, his knowledge increased, and new social connections formed, as well as an unqualified recognition accorded to his position. He will find here a new, fresh chapter to the closing volume of bothy life, every page of which is of the greatest importance. The advisability of prolonging this stage rather than curtailing it will be obvious to a man of sense, and sooner or later the opportunity will arrive for leaving the bothy for good and all. As a rule the best opportunities seem to come later—when a man has, as far as possible under the circumstances, proved his capability and general worthiness. Most young men cannot at this period regard life other than from its more serious side, nor afford to despise any hints or helps, however small, as aids to an end, hence a little further consideration of matters which are so important may not be deemed irrelevant by them from—THE OLD BRIGADIER.

(To be concluded.)



Hardy Fruit Garden.

Protecting Wall Trees.—From the time the blossoms expand to when the fruit has attained a fair size protection ought to be afforded choice wall fruit. The protection, however, must not be overdone, or the trees will be weakened and the young fruit will fall. Unless the protecting material of a close and heavy character is drawn from the trees during the prevalence of favourable weather, the probability is that more harm than good will result from its use. Stormy wet weather and keen frosts injure the essential organs of the flowers and prevent fruit setting. Apricots, Peaches, and Nectarines require attention first, and if movable material is utilised the arrangements should be carried out in good time. In some cases a double or treble thickness of fish netting is found to be sufficient in warding off frosts. If this is used it may remain as a permanency during the time protection is necessary, because it neither excludes light nor air.

Apples and Pears frequently bloom when the weather is unsettled, but only the blossoms of small restricted trees in the open and wall trees can be dealt with. Protection is most needed when the blooms are fully expanded and the anthers are ripe for distributing their pollen. After that it may be dispensed with, as the young embryo fruit is not so tender as that of stone fruits.

Light poles may be erected over pyramid and espalier trees, tying them together at the top and fixing at such an angle as will keep the material used for protection clear of the trees. It will then be an easy matter to stretch tiffany or scrim canvas over on cold frosty nights, removing it in the daytime. Walls afford some protection as a rule to the blossoms of trees growing against them, but unless situated close to the wall surface they are not absolutely safe, those projecting at a distance being liable to injury. A simple means of protection is that of laying poles against the wall and stretching material over them.

Strawberries.—*Planting.*—There is still time to plant Strawberries if stock is available from nursery beds, or even as small plants brought in without any soil attached to their roots. In the latter case spread out the fibres, covering carefully with fine soil and making firm. Afterwards afford a liberal soaking of water. Both these and stronger plants inserted this spring must have the blooms picked out as they show. Also cut off runners and hoe frequently between the rows.

Treatment of Fruiting Strawberries.—Hoe down weeds between the rows, afterwards laying a mulching of strawy manure which, however, should contain some short material. The latter will furnish nutriment for the roots when washed by rain, while the long, strawy, undecomposed parts will provide a clean bed for the ripe fruit. Soot scattered round the crowns, but not among them, proves highly beneficial in banishing slugs and other insects. Before applying the mulching fork in 3 ozs. of superphosphate to the square yard. This is admirable for inciting root action. To have an immediate effect upon growth apply nitrate of soda 1 oz. to the square yard. Also give liquid manure occasionally, and more freely after fruit has set.

Young Strawberry Plantations.—The removal of the flower trusses from all but early autumn inserted plants should be practised. A heavy mulching of rich manure ought not to be applied to young and vigorous Strawberries growing in good soil the first year, as it will be likely to cause superabundant leafage. For the present frequently hoeing the surface soil between the plants will induce a steady growth. When the hot weather arrives a light mulching of flaky manure may be given, which will tend to keep the soil moist.

Planting Outdoor Figs.—Well drained soil of a calcareous character must be provided for Figs, and the position for planting ought to be a warm and sheltered wall. The border need not be more than 6 feet in width for a high wall. Make the soil very firm before planting, which may be carried out now.

Pruning and Training.—Maiden trees, which are the best to plant, should be shortened to 15 inches. When growths push select two of the best and encourage them to grow strongly, and as far as possible equal in vigour. The following season shorten each shoot back half its length, and allow two strong breaks from each to form main branches. From these the fruiting shoots may extend, chiefly from the upper sides of the branches, and must be left at full length for fruiting. Each year, however, some may be shortened closely back, while others are left at full length to be in their turn pruned back. By this method shoots are produced one year to be fruited the next.

Disbudding.—Young fruit trees which start vigorously into growth usually push more growths than it is desirable should extend. Disbudding or rubbing off young shoots when quite small offers a ready means of regulating the position of shoots for forming a shapely tree. The operation may be commenced as soon as the buds burst, first

removing all those in inconvenient positions, such as on the under side of branches, and on those parts nearest the wall in wall trained trees. Disbudding should be a gradual operation, never removing too many growths at once. Of those growths which are well placed a reduction in number ought to be gradually effected, so that the branches subsequently will not be crowded.

Fruit Forcing.

Cucumbers.—The bright weather recently prevailing has resulted in grand fruit, though the nights have been unusually frosty, and the temperature has fallen to a correspondingly low degree. Attend to tying out the growths, stopping one or two joints beyond the fruit, removing bad leaves and exhausted growths, so as to maintain a succession of healthy, fruitful shoots. Water will be needed copiously by plants in houses, and liquid manure once or twice a week may be given with advantage. Syringe the foliage and walls daily at closing time or about 3.30 P.M., and damp the house well in the morning and evening. Shade only to prevent flagging. The floor of the house may be sprinkled in the evening occasionally with liquid manure, or sweetened horse droppings sprinkled on the bed will answer the two-fold purpose of evolving ammonia to the benefit of the foliage and supplying nutriment to the soil.

Plants in pits and frames will hardly need shading as yet, but they must not be allowed to flag. Use tepid water through a fine-rose watering can at about 3 P.M., closing the lights at the same time; but as the nights are as yet cold, be careful that the foliage becomes dry before dark. Close early, employ a thick covering, as a double thickness of mats. Maintain a good bottom heat by linings, renewing them as necessary. Preserve a night temperature of 70°, 70° to 75° by day, 80° to 85° or 90° from sun heat, ventilating from 75°, being careful to avoid cold and drying currents of air, and close sufficiently early to run up to 90° or more. Sow seeds of ridge varieties, and keep young plants of these near the glass.

Melons.—The fruits of the earliest plants are growing large, and must have the supports lowered, while those commencing to swell should be provided with them. Stop the laterals frequently, and thin them where they are crowded. Afford water or liquid manure copiously to plants on which the fruits are swelling, but avoid excesses of liquid manure or top-dressings likely to injure the roots, or the fruit in consequence of loss of feeders may not finish satisfactorily. Plants coming into flower should only have water to prevent flagging, and a drier atmosphere is essential to a good set, especially in the case of vigorous plants.

Attend regularly to setting the blossoms. Stop the shoots one joint beyond the flowers when impregnated, and after the fruits are set pinch the sub-laterals to one leaf, and remove superfluous growths. Avoid giving stimulants to plants until the fruit is swelling, when liquid manure may be afforded liberally, especially to plants carrying heavy crops, until they are well advanced towards ripening. Maintain a night temperature of 70°, 70° to 75° by day, and 85° to 90° from sun heat, and close early so as to run up to 90° or 100°. Ventilate freely in favourable weather, closing early with plenty of sun heat, when the plants may be syringed lightly, except such as are in flower. If canker appear at the collar rub it out with quicklime, repeating if necessary.

Peaches and Nectarines.—*Earliest Forced House.*—Discontinue syringing when the fruit commences to ripen, or it will cause the skin to crack and impart an unpleasant musty flavour. It is very important to have the trees quite free from insects by the time the syringing ceases. If there be the least trace of red spider apply an insecticide, and follow shortly afterwards with a forcible syringing, repeating the process if necessary, so as to thoroughly free the trees from the pest. It is only the very early varieties that will be ripening; the others must be well syringed, and have abundant supplies of water and surface mulchings of short manure or rich material.

Second Early Forced House.—Trees started at the new year have the fruit stoning, and will need care in preventing checks from sudden fluctuations or depressions, the night temperature being kept steadily at 60°, with 5° more on mild nights, whilst on cold nights it may fall to 55°, 65° by day in dull weather, 70° to 75° on cloudy days but with clear intervals, ventilating from 70°, and freely above 75°. Attend to tying-in the shoots as they advance, and encourage no more growths than will be required for future bearing, the extension of the trees, and the swelling of the current crop. The trees must not lack water at the roots, affording liquid manure if they are heavily cropped and not making satisfactory growth, but avoid undue excitement to trees in full vigour, as any impulse given to growth during the stoning is apt to affect the process disastrously. Syringe twice a day in bright weather, and if necessary apply an insecticide, it being imperative that the foliage be kept clean.

Trees Started in February.—Thinning should commence when the fruits are the size of horse beans, removing the smallest and those on the under side or at back of the shoots. Retain sufficient to admit a further thinning when they are the size of marbles, and then only a few more need be left than are required for the crop, leaving those that are best situated for receiving air and light. Disbudding must not

be neglected, and laying in the growths required for next year's bearing wood will need careful and timely attention. Syringe the trees twice a day when the weather is bright, occasionally only when dull, and let the second syringing be at closing time or early in the afternoon, so as to have the foliage fairly dry before night. Increase the temperature to 55° or 60° at night, 60° to 65° by day, ventilating from the latter, and increasing with sun heat to 70° or 75°.

THE BEE-KEEPER.

Foreign Bees.

ARE foreign bees an advantage to bee-keepers in this country whose chief aim is to obtain as large a surplus of honey as possible? We are induced to ask this question after having had a wide experience of the different varieties. We do not favour them, for reasons which will be given. We recently visited an industrious bee-keeper who had numerous stocks of bees, which were in good condition and managed on the modern system; he had never kept any other but natives, which had always done well. Last autumn he was advised to try a change, so ordered a Cyprian queen from a well known dealer; but the queen arrived dead. He was disappointed at his first attempt in introducing a foreign queen into his apiary, and intended trying again. We advised him to keep natives only, as they had done so well for him in the past.

The only reason given by the majority of bee-keepers for trying one or other of the varieties of foreign bees is simply for a change. After going to the expense of procuring them they find they do not obtain more honey than they did previously with the common blacks. It is impossible to keep them pure in this country, and they become a nuisance when crossed owing to their propensity for stinging.

It is now upwards of forty years since the late Mr. A. Neighbour introduced the Ligurian or Italian bee. These came with a great reputation as honey gatherers and were supposed to have a longer proboscis, by means of which they could extract the nectar from the red Clover. It is a well-known fact that the tubes being longer in this variety than is found in the white Clover, the bees are unable to work on it. This fallacy was believed in for many years, but it is now practically exploded. This variety, as well as the Cyprian, is easily distinguished by the bright yellow bands round the body, which cause them to be much admired. They are easy to handle when pure bred, and are good tempered. They are, however, such inveterate swarmers, that they soon become crossed with our native bee; they are then known as hybrids, which are invariably good workers, but often very vindictive.

The Carniolan is another foreign bee that is not so attractive in appearance as the above; they are persistent swarmers which it is almost impossible to stop. We have seen upwards of thirty queen cells in an ordinary hive at one time. If the queen cells are removed they are soon replaced by others, and on the first bright day the swarm comes off, and by the time the swarming mania is over the honey harvest is past. It is therefore not advisable to import foreign queens even for a change.

Our Native Bee.

Our native black or brown bees are known throughout the country. As a rule they are quiet and easy to handle; of course they will protect their stores if molested. Every bee-keeper knows there is a right time and a wrong time for handling bees. If, for instance, it is a windy day, and the bees are unable to venture far from their hive, they are bad tempered, and should not be interfered with. If, on the contrary, the day is bright and warm, and stores are coming in freely, they may be handled with impunity without any danger of being stung. They are hardy, and if well supplied with stores, invariably winter well. They are also good workers, and if the weather is favourable, will store a surplus if it is possible to obtain it in the district. They are equally good for either comb or extracted honey, and what more can be wished for in any variety of bee?

Another important feature we have found since we have kept the native bee as true as it is possible to keep them, is their freedom from swarming. We now find it possible to keep numerous colonies of bees without the swarming mania spreading throughout the hives. Management may have something to do with this satisfactory state of affairs. We, however, do not think it possible to have this freedom from swarming with any other variety of bee.

It will thus be seen that we give a preference to our native bee when honey production is the bee-keepers' chief aim. But as shown, some of the foreign varieties are handsome in appearance, and may be kept for that reason alone.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Mixing Paris Green with Liver of Sulphur (W. H. Y.).—Paris green will not mix with liver of sulphur, soap, or paraffin washes, so that you will need to apply the liver of sulphur solution separately, and also that of the Paris green mixture. This will occasion separate sprayings, but Paris green can be mixed with Bordeaux mixture; thus one spraying answers for both fungous diseases and biting insects, or caterpillars.

The Gooseberry Apple (J. W.).—Your specimens are fine examples of this old variety, which is described by Dr. Hogg in the "Fruit Manual" as follows:—Fruit, above medium size; roundish, with obtuse ribs on the sides, which extend to the crown, where they form ridges. Skin, deep lively green, with a tinge of brownish red next the sun. Eye, open, not deeply sunk. Stamens, median; tube funnel-shaped. Stalk, short. Flesh, greenish white, very tender, juicy, and with a fine agreeable and subdued acidity. Cells, obovate; axile, slit. A very valuable late-keeping culinary Apple, which comes into use in November and continues "till Apples come again." It is said that because the fruit remained firm till Gooseberries were large enough for tarts that the Apple received its name.

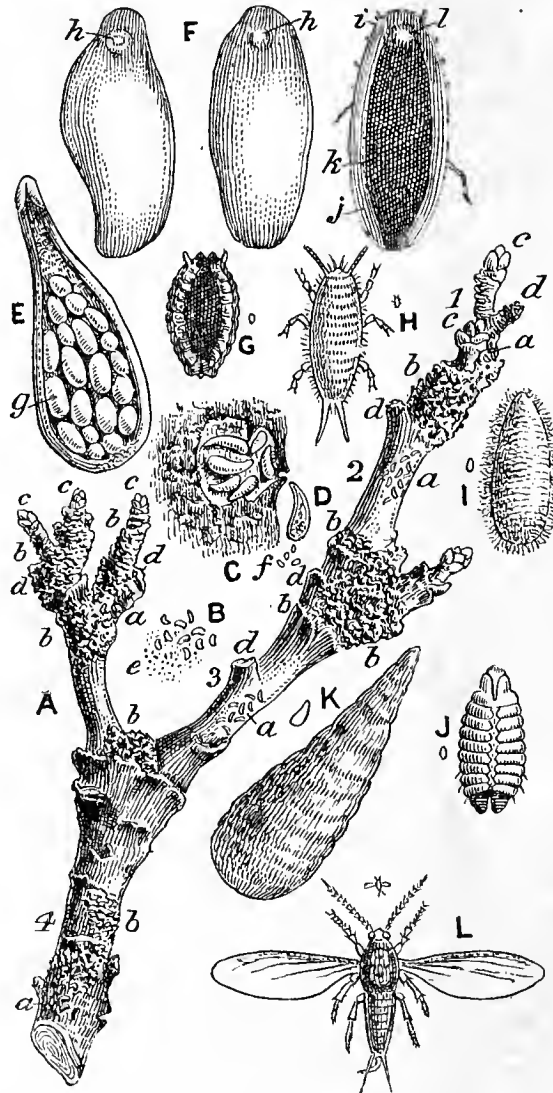
Cannas from Seeds (R. M. D.).—Though we have had fair success by soaking the seed for twenty-four hours in water at a temperature of 130° to 140°, we find it absolutely necessary to insure germination of every sound seed to chip or file the outer skin of Canna seed before sowing. This is of the utmost value, as the moisture from the soil reaches the embryo or young plant, and it must either grow or rot. A Cucumber or other warm house is the best place for sowing the seeds, a mixture of sand and leaf mould being suitable for them. It is a good plan to sow the seeds singly in small pots, covering 1½ or 2 inches deep, as this prevents any damage to the roots, which are somewhat brittle and liable to injury or check in potting or dividing the plants out of seed pans or boxes.

Definition of Chrysanthemum Buds (Idem).—The buds are:—1, First break. This means the formation of a flower bud in the point of the young growing stem, which causes other branches to start from the axils of the leaves below the point where the flower bud formed. This may answer to what you term the "first crown bud," and forms during the early part of May in some varieties and others early in June. Such of the shoots as are allowed to advance in growth in time produce similar buds, known as "second crowns." At whatever time a bud forms in the point of a shoot, and other growths start from immediately below it, that bud is a crown bud, and perishes if the growths below are not promptly removed. 3, The name terminal bud implies a bud formed at the apex of growth, and no other growths start below it, but a cluster of flower buds instead. These are not appreciated by growers of plants for large blooms because the flowers are too small, as a rule, for exhibition stands, even if only the central bud is allowed to remain. The subject is clearly illustrated in Mr. Molyneux's book on Chrysanthemums. Securing and setting or "taking" crown buds at the proper time is an important point with exhibitors.

Potentilla fruticosa (F. J. B.).—On page 313 you will find a description of this perennial, together with an excellent illustration, which will, we hope, convey all the information you require. Do not hesitate to write if you want assistance on this or any other horticultural matter.

Cotoneaster microphylla Twigs Infested with Scale (Cymro).—The twigs are badly attacked by the Apple mussel scale or oystershell bark

louse, *Aspidiotus conchiformis* or *Mytilaspis pomorum*, one of the twigs being quite killed by the pest. The insects are now hibernating in the egg state beneath the parental coverings, which, like single valves of small mussel shells, adhere to the twigs. From these eggs the larvæ hatch out about the middle of May, and appear as mere specks to the naked eye. The eggs are magnified twenty times in the accompanying illustration, fig. 87, E at g; and the larva is shown magnified with natural size on side at H. The young lice move about over the bark for a few days, when they fix themselves upon it, inserting their tiny beaks far enough to reach the sap. Here they continue to increase in size, and by the end of the season have secreted scaly coverings similar to those shown in the illustration at K. The most effective treatment is spraying with a solution of caustic soda and pearlash, when, as in the case of Apple and Pear trees, the plants are quite dormant; but *Cotoneaster microphylla* being an evergreen, your best plan will be to assail the larvæ as they hatch out in May and June with paraffin emulsion, at the rate of a gill of paraffin (quarter of a pint) to 5 gallons of



to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruits tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (J. W.).—Your specimens most closely resemble the Gooseberry Apple; see description on preceding page. (H. L.).—1, Hoary Morning; 2, Wellington; 3, Dutch Mignonne; 4, Newton Wonder, in excellent condition; 5 and 6, not recognised, probably local seedlings. (W. J. E.).—1, New Northern Greening; 2, Wellington; 3, Cockle's Pippin; 4, Bess Pool; 5, Bramley's Seedling.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. J. R.).—1, *Acacia Drummondii*; 2, *Rhododendron fragrantissimum*; 3, *Daphne Mezereum*; 4, *Polypodium pedatum*; 5, *Doodia caudata*. (L. T.).—1, *Dendrobium nobile nobiliss*; 2, *Epidendrum vitellinum*; 3, *Odontoglossum luteo-purpureum*; 4, *O. triumphans*, see excellent varieties illustrated on page 301; 5, *Dendrobium primulinum*; 6, *D. fimbriatum oculatum*. (M. H.).—1, a good variety of *Clivia miniata*; 2, an *Amaryllis* or *Hippeastrum*, which probably never had a distinctive name; 3, *Streptosolon Jamesoni*. (R. C. J.).—1, *Phaius grandifolius*; 2, *Lycaste Skinneri*; 3, *Dendrobium Wardianum*; 4, *Angraecum sesquipedale*. (J. W.).—*Odontoglossum Rossi majus*; 2, *Blechnum occidentale*; *Selaginella canaliculata*.

Covent Garden Market.—April 11th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.				
Apples, English, per sieve	5	0 to 10	0	Lemons, case	4	0 to 15	0		
„ Californian, per case	8	0	14	0	Oranges, per case	5	0	15	0
„ Nova Scotian, barrel	15	0	22	0	„ Californian, seedless	16	0	24	0
Cobnuts per 100 lb....	80	0	90	0	Pears, Californian, case...	6	0	9	0
Grapes, black	2	6	5	0	Pines, St. Michael's, each	1	0	6	0
„ Muscat... ..	4	0	8	0					

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mimosa, per bunch ...	1 6	to 2 0
Arums	4 0	6 0	Mignonette, doz. bunches	3 0	5 0
Asparagus, Fern, bunch...	2 0	2 6	Narcissus, white, doz. bun.	2 6	3 6
Bouvardia, bunch ...	0 6	0 9	" Yellow, doz. bunches	2 0	3 0
Carnations, 12 blooms ...	1 9	3 0	Odontoglossums ...	5 0	7 6
Cattleyas, per doz. ...	10 0	12 0	Pelargoniums, doz. bnchs	8 0	12 0
Daffodils, double, doz. bnch	6 0	8 0	Roses (indoor), doz....	6 0	8 0
" single, doz. bnch.	6 0	12 0	" Red, doz....	4 0	6 0
Eucharis, doz.	2 0	3 0	" Safrano, doz ...	2 6	3 6
Gardenias, doz.	3 0	4 0	" Tea, white, doz. ...	3 6	6 0
Geranium, scarlet, doz.			" Yellow, doz. (Perles)	5 0	7 6
bnchs.	6 0	9 0	" Maréchal Niel, doz.	6 0	12 0
Hyacinth, Roman, doz. ...	5 0	6 0	" English (indoor) :—		
Lilium Harrisii, 12 blooms	6 0	8 0	" La France, doz. ...	6 0	12 0
" lancifolium album ...	3 6	4 6	" Mermets, doz ...	3 0	6 0
" " rubrum...	3 6	4 6	Smilax, bunch	4 0	6 0
" longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch.....	0 6	0 8
Lilac, white, bundle ...	4 0	6 0	" yellow, bunch	1 0	1 6
" mauve, bundle ...	6 0	8 0	" bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	" dark, French, doz.	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	" " English, doz.	2 0	3 0
" Yellow, doz. bnchs.	4 0	6 0			

Average Wholesale Prices.—Plants in Pots.

		s. d.	s. d.			s. d.	s. d.		
Acacias, per doz. ...	...	12	0 to 24	0	Ferns, small, 100 ...	...	4 0 to 8 0		
Arbor Vitæ, var., doz.	6	0	36	0	Ficus elastica, each ...	...	1 6	7 6
Arums, per doz.	6	0	8	0	Foliage plants, var., each	...	1 0	5 0
Aspidistra, doz.	18	0	36	0	Genistas, per doz. ...	...	8 0	15 0
Aspidistra, specimen	15	0	20	0	Lily of Valley, per pot ...	...	1 0	2 0
Boronias, doz.	20	0	24	0	Hyacinths, Dutch, doz. ...	...	10 0	18 0
Crotons, doz.	18	0	30	0	Hyacinths, Roman, per pot	...	0 8	1 0
Cyclamen, doz.	6	0	8	0	Lycopodiums, doz. ...	...	3 0	6 0
Daffodils, pot	0	6	1	0	Marguerite Daisy, doz. ...	...	12 0	15 0
Dracæna, var., doz.	12	0	30	0	Mignonette, doz. ...	...	8 0	12 0
Dracæna viridis, doz.	9	0	18	0	Myrtles, doz. ...	...	6 0	9 0
Erica various, doz.	8	0	18	0	Palms, in var., each ...	...	1 0	15 0
Euonymus, var., doz.	6	0	18	0	„ specimens ...	...	21 0	63 0
Evergreens, var., doz.	4	0	18	0	Solanums per doz. ...	...	9 0	18 0
Ferns, var., doz.	4	0	18	0				

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, green, doz. ...	2	6	to	3	0	Lettuce, doz.	0	10	to	1	2
Asparagus, green, bundle	5	0		5	9	Mushrooms, lb.... ..	0	8		0	10
" giant, bundle	15	0		20	0	Mustard and Cress, punnet	0	2		0	0
Beans, Jersey, per lb.. ...	2	0		2	6	Onions, bag, about 1 cwt.	4	0		8	0
" Madeira, basket ...	2	6		3	6	Parsley, doz. bunches ...	2	0		4	0
Beet, Red, doz.... ..	0	6		0	0	Potatoes, cwt.	3	6		6	0
Brussels Sprouts, ½ sieve...	1	6		2	0	" Teneriffe, cwt....	18	0		28	0
Cabbages, per tally	9	0		12	0	Radishes, Jersey, long, doz.	0	8		0	10
Carrots, per doz.	3	0		4	0	" French, round, doz.	1	6		0	0
Cauliflowers, doz.	3	0		4	0	Seakale, doz. baskets ...	15	0		18	0
Celery, per bundle	1	0		1	9	Shallots, lb.	0	3		0	0
Cucumbers, doz.	4	0		8	0	Spinach, per bushel... ..	3	0		5	0
Endive, doz.	1	6		2	0	Sprue, French, per doz. ...	9	0		10	0
Herbs, bunch	0	2		0	0	Tomatoes, per doz. lbs. ...	4	6		5	6
Leeks, bunch	0	8		0	0	Turnips, bunch... ..	4	0		6	0



Plants, Injurious and Otherwise.

RIGHTLY or wrongly, there is a great deal of ignorance shown respecting the properties of many weeds and plants that are found on almost all farms. Of course a weed is always out of place, but as weeds form part of the primeval curse, we shall not be rid of them yet awhile. Some may possess good properties; others, alas! are undesirable, if not even actually dangerous, and some again are actively dangerous.

In the Journal of the Royal Agricultural Society for last year is a most interesting paper by the consulting botanist, W. Carruthers, Esq., on his work during the year. It is full of useful information, and well worth a close reading; but as perhaps few of our readers will have a chance of coming at the article in question, we propose to mention some of its salient points. Part of this gentleman's work is the examination of seeds and their testing as regards the germinating powers; this is a most useful work, as farmers should have full value for their money. The seed bill is always a heavy one, and a season missed is missed for ever. That field shows signs for years to come where the growth of seed has been irregular and "chancy." Mr. Carruthers is consulted by many members of the Royal as to the injurious properties of many plants. So often mysterious ailments arise among stock, and owner and vet. are both sadly puzzled to see what the real mischief springs from. Some stock appear to possess curiously morbid or depraved appetites, and notwithstanding good pasture, will leave it to eat all manner of rubbish. (By the way, we once knew of some incalvers who feasted royally on nitrate bags that had been washed and hung out to dry. The bags disappeared, and the cows followed quickly, or at least the greater part of them.)

We are all ready to admire the beauty of a grass field rendered "golden" by Buttercups; nothing can be gayer or brighter, and yet every species contains an acrid and irritating juice. Generally it will be found that stock will leave Buttercups severely alone, but a case occurred last year where it might be inferred that, for some reason or

other, both ewes and lambs and young horses ate of the Buttercup in a field of Clover. This was the Upright Buttercup (*Ranunculus acris*), and the effect on the young animals was excessive scour. The juice of this plant is extremely acrid, and would produce the mischief laid to its charge. The Small-flowered Buttercup (*R. parviflorus*) also possesses in a green state a very acrid juice, but when the plant is dried into hay this property disappears. The Pilewort (*R. ficaria*), which is also much found in damp meadows early in the season, is also acrid, but in a less degree than the others; it occupies the place of better feeding grasses or herbs.

There is another plant very common in some neighbourhoods, and known by the names of "Lords and Ladies" or Cuckoo Pint (*Arum maculatum*); it has been known to act fatally on children, and would be most harmful to stock should they get any of it, as it has an acrid and pungent juice. We should hardly imagine that stock would eat it except in cases where pastures were very bare, or the appetite very depraved.

There were cases reported of the death of calves, which said calves had had access to both Laurel and Rhododendron trees. How this came about we are not told. It is a warning to be most careful to keep stock from ornamental shrubs of this nature, for they abound in that most poisonous of essences—viz., prussic acid. The form this poison takes is narcotic, and the symptoms are drowsiness and stupor. We remember a case where a tribe of most valuable Shorthorns got at shrubs of this sort across a frozen lake; that danger had not been foreseen or guarded against. In another case the natural fence was a stream of some depth which, owing to continued drought, became passable—and stock always like to forage about. We have known cases where gross carelessness has been shown in the disposal of clippings and cuttings of shrubs. The only safe method is to make a good bonfire. (Discarded Christmas decorations are often left lying about in a most haphazard manner, and neither decayed evergreens nor fine wire are desirable feed.) We remember a case where a careless boy mowed grass under a Laburnum tree just as the seeds were shed, and carefully conveyed it to a yardful of pigs—result, several funerals. Mr. Carruthers also finds death was caused to young cattle by the eating of *Nicotiana affinis*. It seems strange to us how they got a chance of tasting this particular growth; it is generally only found in gardens.

Need we speak of the poisonous nature of Yew? The action is so quick that there is time for no remedy; indeed the first intimation that anything is wrong is the dead body of the victim. It has been supposed that only half-withered bits of Yew were injurious; of that the authorities seem uncertain; but there is a concurrence of opinion that the fresh young shoots are fairly safe, though not a desirable feed.

There are two other plants that have been found to be fatal to stock not quite so well known as some of the aforementioned. The first which was fatal to sheep and cattle is a habitant of ditches and watercourses, the English name being Waterdrop Wort or Water Hemlock. It is supposed that stock accustomed to grazing in meadows where this plant is found learn by instinct to avoid it; and it would be only stock from upland pastures bent on trying all herbage in their new quarters would make a meal of Water Hemlock. Another plant to be carefully avoided is Dogs' Mercury (*Mercurialis perennis*). Left to themselves stock will not touch it, and in cases where it has proved fatal it has been found that the plant has been introduced to the stable among cut fodder. As it grows in woody or shady places there can be little or no excuse for the carelessness of the grass cutter. Fodder from such situations is neither good nor desirable.

After two years where acorns have been most plentiful, we are hardly likely to have another prolific season; still it is as well to be on the look out. There have been so many cases of illness and death from over-indulgence in this particular, shall we say fruit or nut. Like the schoolboy's rich cake, divided it would do no harm, but gobbled up by one the results would not be pleasant. Unfortunately, animals as well as boys do not always know when to stop.

Mr. Carruthers has been able to prove a "not guilty" in the case

of several suspected plants, such as Hogweed or Cowkeep, which stock will partake of freely; and Self-heal, which is simply a weed instead of a fodder plant. There has been an idea prevalent in some districts that Ground Ivy (*Nepeta Glechoma*) will cause abortion in foaling mares. This is quite an aspersion, as the plant is quite harmless. The seed of the Corn Cockle plant, which will usually be found in the small offals of corn reserved for poultry, are of a distinctly poisonous nature, and care should be taken to sow no sample of corn in which these seeds are found. There is a species of Bitter Vetch (*Lathyrus*), the seeds of which contain narcotic poison, and therefore were very much out of place in a sample of horse corn.

Year by year the work of the consulting botanist grows and increases—people are more alive to the value of assured knowledge on uncertain questions, and having regard to the national importance of such researches, and the fact that Continental nations pay for and organise similar ones out of national funds, it would not be unreasonable to ask the British Government to do the same. Now that the Royal Agricultural Society finds it to be necessary to suspend the touring nature of its annual show, and to make the show a fixture, in order to make ends meet, it might surely be relieved of the burden of carrying on public experiments and researches.

Work on the Home Farm.

We are having finer weather, as there has been only a wet night to break a fine week, so drilling proceeds merrily. We have met one farmer who had all sown by April 1st, but we must imagine that he is a *rara avis*.

We have much more satisfaction in drilling Barley now, as there is a better mould, and with a cloud of dust behind the drill there is a good prospect for a crop. We see many farmers sowing or drilling small seeds immediately after the Barley, and harrowing all in together. This is a good plan for the grasses, but Clovers may be buried too deeply, therefore we prefer to Cambridge roll the land after the Barley has been harrowed in, then sow the seeds on the roller seams. One more harrowing will well cover the seeds, whilst leaving them near enough to the surface. Some land is so given to weeds that it is absolutely necessary to postpone the sowing of Clover until after the Barley is up, but we do not like the system, and would not practise it unless absolutely compelled, as our own experience has quite convinced us that the harrowing of growing Barley is responsible for unevenness in many otherwise good samples.

Harrowing Wheat is quite another matter, and, as the weather is now favourable, it should be rolled, if that has not already been done, and well harrowed. We have never yet seen anything but good come from harrowing Wheat, if it be done before May. This is the time to put salt on, if it be thought desirable. Four cwt. per acre, costing 3s. 6d., will pay to apply on light land, especially if nitrate of soda be used as well, for the salt has a good effect on the healthiness of the straw. Nitrate should be applied this month if at all, 1 cwt. per acre is enough for any Wheat crop, and we have more often used about 80 lbs. per acre.

Spring Tares for use in harvest must soon be sown. We have generally sown autumn Tares in April to come in after the autumn sown ones, as we think this variety produces better green fodder than the spring sort, as it is not so frothy and watery. Autumn planted Cabbage are now beginning to grow nicely, and they must be kept clean by the use of the hose and hand hoe. 1 cwt. of sulphate of ammonia per acre will do this crop good. It should be sprinkled between the rows and skerried in. It may not be near the plants, but the roots will find it as it gets washed down, and nitrification takes place.

DAINTINESS OF SHEEP.—Sheep deserve the name of "neat cattle" much more than do the bovine race. They are more dainty about their food and water than any other animal we know, unless it be a thoroughbred horse. The food that other animals have left and have breathed upon they reject at once. They will not pick fodder or grain from the mud. They will not drink from a dirty puddle, and they would jump a rod or go a mile round sooner than to wade through one, or through a muddy place in the road. In all this they must be humoured, and if the hens roost on the sheep racks, and the floor of the sheep shed is not kept dry and clean, we cannot expect thrifty sheep or strong healthy lambs. They also object to the grain if it is mouldy, or if rats have frequented the bin, and will go hungry with grain or rotten roots before them if the smell is not such as they approve. The careful shepherd, says a contemporary, should keep all this in mind.

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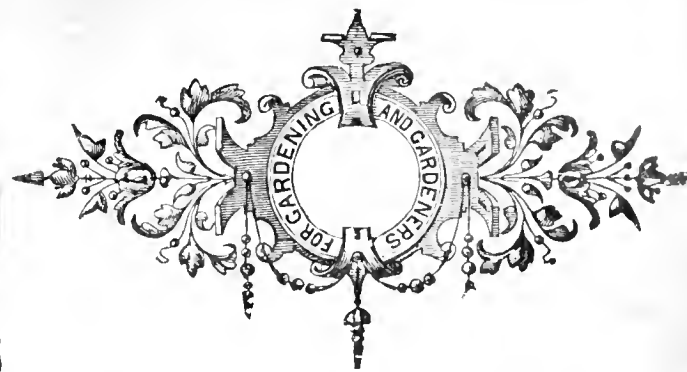
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THURSDAY, APRIL 19, 1900.

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Pre-Victorian Days.

THIS is my Golden Wedding year of authorship, for I may now in my eighties fairly boast of the feat of having bent the printers' backs off and on for fifty years through this Journal. My baptism of flower-show took place in 1835, or perhaps a year later. This uncertainty makes me think I am growing old, as I do not always retain the power to remember names and dates. However, I must not complain. Suffice it to say I happened to be in London in those days of William IV., with the Rev. G. W. St. John, a near neighbour of T. A. Knight, the noted president of the R.H.S. Mr. Walpole, then of the Treasury, married a daughter of Mr. Knight—they were great friends of Mr. St. John's, their town house being in Upper Wimpole Street, Portman Square, and thither Mr. Knight annually resorted to be near Chiswick for the chief show. A peculiarity of Mr. Knight's was never to sleep upstairs in London, so the back dining-room had to be fitted up as a dormitory on those occasions. The footman having sprained his ankle, it prevented him taking his place on the carriage to Chiswick, so application was made for me to officiate, which I gladly accepted. I can see it all in my mind's eye now—a vast gathering of the élite from the West End and elsewhere. The pavilion and tents filled with horticultural productions of all kinds—flowers, fruits, and vegetables; also half-hardy and hothouse plants in huge pots and tubs, large and densely bloomed and trained in pyramidal and globe shapes. The gardens and lawns were then in all their integrity, furnished with rare and beautiful trees, which, alas! have nearly all long since had to give way to bricks and mortar.

It was a gay sight. Moving among the crowd of fashionables were members of the committee, judges, editors of the then sparse gardening periodicals, the nurserymen and gardeners exhibiting, young and active, among whom was Donald Beaton in all his glory. Little, however, did this young man then dream that he would in

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after years sit as a member of the fruit committee in the room of the pavilion devoted solely to that purpose—a position gained after years of self-searching toil, and a portfolio of first-class certificates and other awards. “Passing rich on fifty pounds a year,” I managed to keep myself in evidence with the R.H.S., not excepting the anxious troublous times at South Kensington with the Commissioners of the 1851 Exhibition, and the “inevitable Dilke.” I exhibited, too, a great deal in those years, though I seldom did so for competition prizes.

After the aforesaid fête in the Chiswick Gardens, in 1835, I believe the next day, we left. The old stage coach started in the morning from the Green-Man-and-Still, Oxford Street, for Reading, where it arrived in the afternoon, allowing me plenty of time to look about and to procure seeds at the Brothers Sutton. I have dealt with them ever since, and for the last three decades done business with the firm, but *O tempora! O mores!* How many wonderful changes have happened in Reading since those days! Leaving by coach early next morning, we wended our way to Oxford, and after looking over the Botanic Gardens, stayed to sleep at the Mitre. Starting again at an unrighteous hour on the following day for Worcester, we passed through Woodstock, over those Chipping Norton Hills when it snowed. After that the early breakfast at the Moreton-in-the-Marsh Inn afterwards was something to be remembered. Thence we made for Worcester, where the cathedral served to rivet one’s attention for the rest of the day, and rising with the lark, were off again next morning, through a lovely country to Ludlow, where we arrived about midday, posting by chaise from the Crown to our destination at Stanton Lacey.

To all my gardening friends at Ludlow and around I meted out my impressions obtained at Chiswick. Having become tinctured with flower-show I began to preach flower-show, but I soon found out that agitating for a local show was to be a long task. The majority of the gentry did not then favour shows, being under the impression that their best products would disappear for the advantage and glorification of the gardeners. However, I did not despair, but waited for a friend at court. After long waiting it came to pass in this way. My flirtations with the Cinderella of Nature, the Potato, began to be “talked about,” and reached the ears of Mr. Knight, who was himself inclined that way. Through him I procured the attention of the Hon. Robt. Clive, M.P., of Oakley Park, Bromfield, who took a great interest in the culture of that esculent.

I often walked over to Downton Castle, and in course of time became on speaking terms with Mr. Knight anent many things, the Cinderellas in particular. He was a tall, kind, sociable gentleman, and would converse with both young and old. I have descendants of his Elton Pine Strawberry, which he gave me about this time of year sixty years ago, and there are very few late sorts that can equal it. Mr. Knight was his own head gardener, the foremen being old retainers about him who carried out his multifarious instructions. His visitors sometimes had to look out in order to dodge the rotten Apples and Pears which would come flying out of his fruit room window upon the lawn. Well, for a long time, as I mentioned above, I had been waiting for an opportunity to speak with Mr. Knight on my pent-up subject. One day Mr. Knight happened to be in one of his glass houses when I was passing; I paused, he invited me to enter, and pointed out what I thought to be some extraordinary experiments he had proceeding there. They related to the growth of certain plants which were fixed upon the tires of small wheels kept perpendicularly slowly whirling round upon their axles by clockwork movements, in some way like a roasting-jack, against the sun, the roots growing in pots being now up, and then the foliage and branches. It was altogether very funny, and past my understanding. I know I found it difficult to start unfolding what I had on my mind, but then was the time. Chiswick, however, came to the rescue. A chat about the shows there gave me an opening to hint what a capital place the greensward within the walls of Ludlow Castle would make for a local flower and fruit show. Mr. Knight said my propositions were right, but the difficulties to arise were too great, unless I had sufficient power and guarantee at

my elbow to assist to carry them out, which of course in my position I had not. Hence my enterprise lapsed.

I then determined to rest upon my oars, as I felt I was twenty years before my time. Do you remember the meeting of the Royal Agricultural Society of England at Shrewsbury in 1845? I was staging at that fine old mansion, Condover Hall (Mr. Smith Owen’s), for that occasion. The gardens at “Condor” were noted and beautiful, and as a matter of course I foregathered with the gardener and made acquaintance with other local sons of the spade, with whom I never lost an opportunity of pressing my favourite topic. I suggested, as there was not then a horticultural show in the county, that Shrewsbury being the county town would do well to take a lead in that way. The subject became talked about, but though that was in some sense the sowing of the seed, years had to pass before I saw my dreams become a reality. My views had to await the growth of the railways, and with them the spread of broader notions of business and gardening. But I have been luckier than many reformers. I have survived the day of struggle, and now, in the eventide of a long life, I see every village celebrating its annual flower-show, and the horticultural festival of the West of England the event of the year.—ROBERT FENN.

The Value of Tree Shelter.

THE value of trees planted near gardens as wind-breaks from the north, west, and east has frequently been remarked upon. It is a matter, however, that has not always been sufficiently considered when the sites have been chosen. Garden walls, even when lofty, or say 14 feet in height, do not give anything like a proportionate shelter, in winter and spring, to the garden that trees do in suitable proximity. In a large garden cold east or north winds will pass over a garden wall, and at some yards distance from it the sheltering influence is scarcely felt, when there is open country outside it, and few deciduous or evergreen trees to filter it. Such gardens afford object lessons at the present time in the dearth of outdoor green vegetables, especially when compared with others suitably protected.

I had an instance quite recently clearly exemplifying the value of tree shelter in a good sized kitchen garden, this being bounded at a short distance away with evergreen trees. Here was much the best plantation of Broccoli I have seen anywhere, mostly of Late Queen, Model, and Veitch’s Maincrop. Winter greens, too, were abundant, and had been all the winter. It is needless to say that such a satisfactory vegetable supply has been most enviously viewed by gardeners less fortunately situated. This garden had no walls, but instead, hedges and tree belts, which in severe winters are most effective.

Walls are a necessity for the growth and protection of choice and tender fruits, and also for security against the raids of persons mischievously inclined, but their presence, apart from outside aid, does not afford so much shelter as is commonly supposed. They would be more effective if the enclosed space were intersected by dividing walls—that is, in the case of a large garden. It is curious how the force of westerly gales creeps into enclosures even when ample provision has been made to keep it out; tall plants and pit lights, for instance, can in few cases be left without concern during the autumn.

The nature of the soil has much to do with the condition of spring crops, apart from shelter, as also does the aspect. Soil overlying gravel or sand is much warmer than that of an opposite character—clay; and a garden having a southern slope possesses advantages over another which faces east or north, or, indeed, a perfectly level one; while in other respects the latter claim some particular advantages from a labour point of view over gradients more or less pronounced. It, however, matters not what the aspect or soil may be, there is the same value in tree shelter both for the growth of fruits and vegetables.—W. S.

**Cattleya intermedia Fowler's Variety.**

At the meeting of the Royal Horticultural Society held in the Drill Hall on Tuesday, April 10th, an Orchid exhibited by Mr. J. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, was recommended a first-class certificate under the name of *Lælio-Cattleya intermedia* Fowler's variety. This is favouring the assumption that the plant is a natural bigeneric hybrid, though it has hitherto been regarded as a Brazilian species. Whatever it may be, the flower shown (fig. 88) was exceptionally beautiful, and received warm expressions of admiration from everyone. The shape of the flower is well depicted in the illustration. The sepals and petals are very delicate rose. The front portion of the splendid lip is deep crimson, while the side lobes are soft primrose and the throat bluish. It was well deserving of the honour accorded to it by the Orchid Committee.

Dendrobium**Leechianum.**

As showing the variation in hybrid Orchids this very fine plant is worthy of note. It is of course from the same parents as *D. Ainsworthi*, but it is very distinct, and I always consider a far better grower. In a short time healthy little bits make fine plants if well treated. They are best raised from flowering stems, and if these are taken off directly the blossoms are past and laid in pans of moss they will be nice stock ready for potting separately by the end of the season.

Much the finest collection of plants of this section—i.e., *D. nobile* hybrid—I have seen were growing in a small span-roofed house with absolutely no fire heat from May onward, and as soon as the majority of the stems were well developed the house was thrown open all day long and all shading removed, only being closed when danger from early frost was apprehended. The small pieces I noted above made stems from 9 inches to a foot in length the first season after potting, and flowered abundantly the next. This is a far better method of propagating than division of the plants. The flowers of a good form of *D. Leechianum* (fig. 89, page 325) are 4 inches across, the sepal white tipped, with purple and feathered blotch of crimson appear on the lip.

Phaius Cooksoniæ.

The specimen sent by "Young Orchid Grower" represents a poor flower of *Phaius Cooksoniæ*, which though only exhibited for the first time about five years ago is already comparatively plentiful. It is a hybrid from a cross between *P. Humbloti* and *P. grandifolius*, and

was shown by Mr. W. Murray, gardener to Norman C. Cookson, Esq., Wylam-on-Tyne, in competition for a special prize that was offered by the Royal Horticultural Society for the best seedling Orchid. *P. Cooksoniæ* (fig. 90, page 325) received the premier award, and is particularly handsome. The sepals and petals are of a peculiar shade of buff, with flushings of rose. The lip is superb, being purplish rose at the outer portion and yellow mottled with brown in the throat.

Lælia majalis.

This must certainly be awarded first place among the Mexican species of the genus, its large, wide-opened blossoms being extremely showy, especially when a well-flowered specimen is seen. Unfortunately, many growers still persist in keeping it in heat and moisture all the year and complain as to its paucity of flowering. It is free enough if thoroughly ripened by exposure in summer, and the only fault is that in such circumstances it is apt to exhaust itself in a few years, the pseudo-bulb being small when compared with the superb blooms. A native of immense tracts of country, it is naturally variable, but every form of it is good.

Dendrobium**Brymerianum.**

The flowers of this delightful *Dendrobium* vary considerably in size, but, excepting the almost worthless *D. B. histrionicum*, all are excellent Orchids, the long flexuous fringe to the lip being a very attractive feature, as well as the bright yellow tint of the whole of the flower. Under the usual treatment it blossoms every season, though it cannot be described as a very floriferous species, but what is lacking in quantity is more than compensated in beauty. The roots are rather larger than the ordinary, and the compost may be rougher, and the pots a little larger than usual.

Leptotes bicolor.

This pretty species comes for identification. It is not much grown

nowadays, being far too small for the majority of orchidists, but it is a pleasing plant nevertheless. From the base of the cylindrical leaves the flower spike springs, each blossom being of two colours, as its name denotes—white on the outer segments, with a purple streak on the lip. It is not a vigorous plant, and should be grown in small baskets or on blocks in the intermediate house. It will not stand severe drying in winter, but must not be kept too wet, and it should always be very firmly fixed in position.

Varieties of Dendrobiums.

On more than one occasion recently I have had complaints from amateur growers that plants they have purchased in flower one season do not come up to their proper form the next. In some instances doubtless there is a reversion from a good form to a poor one, but this is usually in the case of a newly imported plant being sold in flower, as the next season's blossoms are often disappointing. But in others the fault is often in cultivation, and this is proved by the fact that from certain parts of the stem on *D. nobile* there are often good flowers, while on others they are smaller and less perfectly formed.

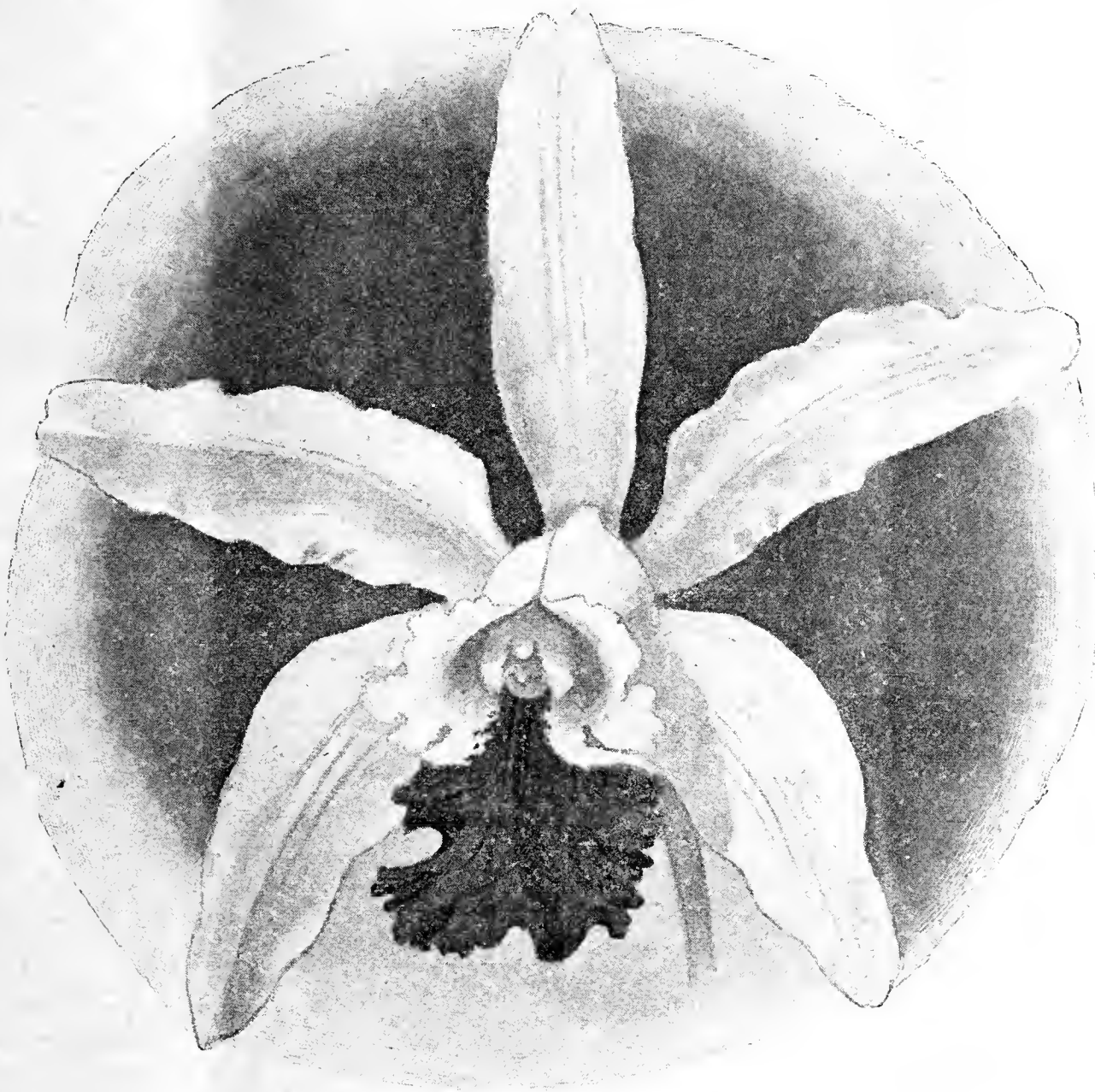


FIG. 88.—CATTLEYA INTERMEDIA FOWLER'S VARIETY.

They are of course undeveloped when the plant is introduced to heat in spring, and only the most favourably placed blossoms appear in the proper form. If the whole of the stem shows poor flowers then of course the plant is either of a bad form or it has been insufficiently ripened. Large stems of most species when carrying many flowers will usually have the best of these towards the top, the lower ones being smaller and less perfectly coloured, evidently owing to want of light or something that hinders their full development. At any rate it is unfair always to blame the nurseryman who supplies the plants.—H. R. R.

Gardening on Grass.

TIMES out of number fluent pens have written of the kaleidoscopic changes that have come about in the art of gardening during late years, and the consensus of opinion apparently favours the assumption that the march has ever been towards better things. The geometrical precision with which our forbears laid out their gardens has given place to a more pleasing informality. But in this very informality there lies an element of danger, for it may occasionally lead to a state of wild confusion which is by no means beautiful or natural. Even the most ardent advocates of informal gardening could not lend their support to a condition of affairs that is nothing more than a chaos.

There is, however, one form of free and natural gardening that appeals with irresistible force to all, and that the planting of bulbs in the grass of mounds, dells, wildernesses, and in pleasure gardens generally. It is a phase of gardening that has come to the fore with enormous strides, but which is still to all intents and purposes in its infancy. A few years back it was the exception rather than the rule for many bulbs to be found flowering in a grassy carpet, but now the position is practically reversed. From this it must not be inferred that the practice is a new one, for such is not the case; on the contrary a few of the more advanced cultivators have long since adopted it and sounded its praises on every available opportunity. Until recent years, however, the results of their efforts for the popularisation of one of the most charming phases of gardening were not particularly encouraging. Although the present day stage is such an advance, there still remains abundance of room for development and extension, and it is more than probable that this and other forms of informal gardening will, during the next two decades, attain to such a degree of excellence as will satisfy everyone.

In perhaps only one direction can grass gardening be carried to an unwarrantable length, and that is in planting on lawns. To such a practice there are several urgent objections. The chief beauty of a lawn lies in its unbroken surface, and whether this be level or undulating, it is spoiled immediately bulbs are planted here and there in it. To many people no portion of the garden has greater attractions than the lawns, with their perfect sward—a sward, we are told, such as cannot be excelled by that of any country in the world, and, indeed, is rarely equalled. It is an act of distinct vandalism to plant bulbs in this grass, although it certainly has been done, and that in places of no small pretensions. This is the more regrettable as it will, if persisted in, bring the utilisation of bulbs and plants in the grass into disrepute. Advocates of the system must therefore, in recommending extensive planting, guard against advising it in too general terms, but instead, specify either positions that are suitable or those which are unsuitable. As a broad principle, it might be laid down that no bulb or plant shall be grown on any piece of grass, large or small, that is supposed to be kept as a lawn. The writer can picture in his mind one lawn, of splendid proportions, that is completely spoiled as such by the square patch outside one of the windows of the mansion, and which the owner insisted should be planted with Daffodils.

Once the dividing line, which should not, as is sometimes the case, be in the form of an iron fence, between the lawns and the pleasure grounds has been passed grass gardening may begin in earnest. In practising this phase of horticulture many things have to be considered before success can be positively assured. The number and variety of the plants and bulbs at command must be determined, and then positions must be sought that are suitable, according to the shade lovers the essential protection, and to those which luxuriate in the full light the benefit of all the sun. Continue the walk and pass by an imperceptible transition from the pleasure gardens to the woodland walks beyond, and still the grass gardening must be continued with the difference that here our own native plants are real adornments, and the addition of bulbs and exotic plants will be simply

adding another delightful feature to a beautiful part of the demesne. In brief, every portion of the grounds, save the lawns, can be improved and beautified by the utilisation of plants and bulbs which for the most part can be readily procured.

The present is the best season of the year for enjoying the charms of the bulbs that rise from their grassy carpet, and many instances could be cited of particularly pleasing results that have been attained to. In the Royal Gardens, Kew, in several of the London and provincial parks, as well as in numerous private places, hundreds of thousands of bulbs have been planted, and the results are almost invariably satisfactory. True some places are more attractive than others, this being accounted for by the surroundings, and also by the taste of the planter, for even as there must be taste in arranging a dinner table, a conservatory or a flower garden, so must there be in planting bulbs in the grass of pleasure gardens. To crowd every square foot of ground with different bulbous roots, irrespective of kind or position, is not exercising the gentle art of gardening, but simply filling space, and is not at all likely to prove pleasing to those of refined tastes. Discrimination must be used here as elsewhere in the garden, or it is best left alone, and reliance placed on the trees and shrubs and the grass.

Opinions differ as to whether the planting should be in mixture or otherwise. For example, some growers adopt the system of planting Daffodils, Crocuses, Tulips, Snowdrops, and others *en masse*, and the benefit of a long season of flowering in one special place is claimed. The wisdom of this is doubtful, as generally speaking the formation of colonies, so to speak, is followed by the best results. Some places that are suitable for one kind are not for another, and therefore the planter is on safer ground when he avoids heterogeneous mixtures. The distinction can under some circumstances be made even more stringent in planting only one variety of a kind in each situation. There can be little doubt that this is the best method of all to follow, but it is not always feasible, as the outlay in stock is likely to be much greater. Two or three bulbs or plants, as the case may be, are seldom sufficient for a given position; indeed, a similar number of dozens will not always suffice, and it becomes necessary to make special purchases which with some varieties may be an easy matter, but with others is difficult on account of the expense.

In the majority of instances the question of ways and means is much more readily answered, for little or no stock is specially procured. One of the most beautiful examples of gardening on grass has been carried out without the outlay of a single penny, except for labour, on the part of the owner of the garden. Many thousands of bulbs are there planted, but not one was procured for this specific purpose. Thousands of plants, too, have been employed, but these have been propagated from existing stock, or have come from brother gardeners in the customary course of exchange. The gardener made it his hobby, and not only found intense delight in it himself, but gave equal pleasure to his employers as well as to the numerous visitors. All the bulbs planted have been grown in pots or boxes for the conservatory and for cutting purposes, and when the almost unique beauty of the grass gardening is seen it seems nothing short of sin to throw away one single bulb.

Such a rigid system as this, however, unquestionably has its disadvantages, except in establishments where several thousands of bulbs are potted annually. As a matter of fact it is preferable in any case to order specially for the purpose, particularly of Daffodils and Crocuses, of which excellent bulbs can be purchased at such low rates. All bulbs from pots that are not required for shrubbery or other borders can still go to the grass garden, while for the wilderness and woodland where masses are most effective advantage may be taken of the cheap stock that is purchased in bulk. With a view to keep quite abreast of the times many of our leading bulb merchants make special offers of Daffodils for culture on grass, for which purpose some varieties are rather better adapted than others. Tulips are not invariably satisfactory, but otherwise practically all hardy bulbs succeed, while the plants that are amenable to this form of culture are so well known as to render names quite superfluous.

Although it is not always done, planting should always be carried out by first removing the turf, improving the soil if necessary, planting carefully and relaying the turf. Sometimes a dibbler is used, but it is not by any means good practice, as the planting is never done properly, hence the bulbs are not nearly so likely to produce satisfactory flowers. Let the planting be done thoroughly, and it will usually be found that instead of deterioration in quality in subsequent years, there will be improvement with an almost certain increase in the number of bulbs. The after treatment is of the scantiest, for it simply consists of the avoidance of mowing until all leaves have died away; to mow the grass and green leaves on the score of tidiness is simply to court failure, as it is the perfect development and maturation of the foliage that govern the after condition of the bulbs and the quality of the flowers they will produce in the future.—F. ROWE.

Garden Stock in England.

THE conquest of this country by the Romans was the cause of the first impetus given to the cultivation of culinary luxuries in Great Britain, and the further subjugation of England by the Normans was attended with an accession of hitherto unknown treasures of vegetation, which gave to the ground a wider scope for industry, and to the vegetarian a more appetising set of courses. The first fruit novelty introduced into this country is supposed to be the Cherry. Lucullus originally brought it from Cerasus, a city of Cappadocia; he introduced it into Italy, and thence it was imported into Britain about the middle of the first century. In his "London Lickpenny" Lydgate, the poet monk of the sixteenth century, thus alludes to their sale in the street—

"Hot pescode own began to cry
Strawherys rype an cheryes in the ryse."

But though they had thus early attained to a coster popularity, it was not till the close of the seventeenth century that some inventive genius conceived the idea of hawking them on sticks to tempt the youngsters of the period.

The Pear has a very ancient history as a cultivated fruit in the gardens of the East, where it was highly valued for its refreshing and luscious qualities. It was brought into England with the Peach, Apricot, Quince, Almond, and Melon; those exquisite delicacies of fair ladies' taste were imported from Epirus, Carthage, Armenia, and Syria, and became established in Britain under the cultivation of the Romans. The Walnut and Mulberry, originally indigenous to Persia, were first planted in England about the middle of the sixteenth century, at which time, also, the Plum and the Nectarine, natives of Asia, were brought to our gardens by the Crusaders. Filberts and Apples that are now of such staple importance in our markets, were first imported from France, where the nuts took their name from Phillipert, monarch of that kingdom. As late as the reign of Henry VII. Apples were very scarce in England, and sold at prices not less than 2s. each, while from 8s. to 10s. were paid for a like quantity of Strawberries to that which we buy now in the season for 6d.

Red Roses were such luxuries that 3s. was a moderate price for a single bloom, and when we take into account the extra value of coin of the period, these charges indicate their value as novelties. In the same reign Lord Cromwell introduced the Perdrigon Plum, and Apricots and Artichokes were luxuries cultivated for Royal use only by Wolfe, the King's gardener. Clover Grass was unknown in these kingdoms till its introduction by Sir Richard Weston about the middle of the sixth century; and another worthy knight, Sir Anthony Ashley, by importing the Cabbage, earned a debt of gratitude from those who appreciate the appetising qualities of that vegetable.

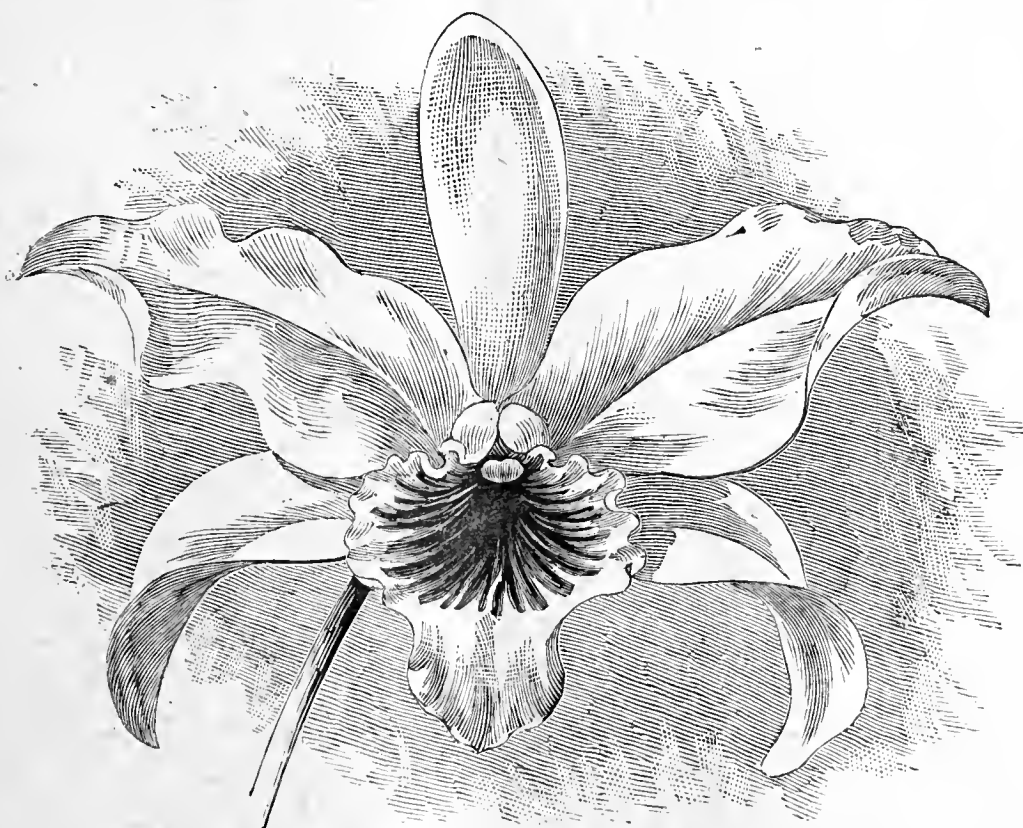


FIG. 89.—DENDROBIUM LEECHIANUM. (See page 323.)

It was about 1524 that the Protestant Walloons brought over slips of the Hop plant from Artois, and cultivated it in Kent, and its first use in the brewing of beer caused a serious commotion among the

anti-adulteration agitators of the period. The following old distich marks the time of its birth in England:—

"Hops, Reformation, bays, and beer,
Came into England all in one year."

Up to the end of the sixteenth century some of the most important vegetables were unknown to English taste, excepting as preserves



FIG. 90.—PHAIUS COOKSONII. (See page 323.)

salted down. Catherine of Arragon, who had been accustomed to the use of new green meat in her native country, was constrained to send for her daily dish of salad by special messengers to Holland and Flanders; such a long journey to market for a few vegetables is surely matter for curiosity and amusement to the visitor of the present day to Covent Garden Market. Throughout the reign of Henry VIII, a Cabbage from Holland was regarded as a valuable present, and during this dearth of garden table stuff Hull pushed a considerable trade in Cabbages and Onions. As late as 1595 a sum equal to 20s. was paid in that port for six Cabbages by the purveyor of the Clifford family. It was about this time, says the present writer in the "Standard," that the English appetite was whetted for the charms of the Apricot, Gooseberry, Pippin, and Artichoke, and the Currant bush, originally brought from Zante, was then a novelty. It was also towards the end of the sixteenth century that Cardinal Pole set the first Fig tree in the garden of Lambeth Palace.

In the reign of Elizabeth, Edmund Grindal, afterwards Archbishop of Canterbury, transplanted the Tamerisk to England, and it is to the Carew family that the country owes the early introduction of the Orange tree. The first China Orange which appeared in Europe, was sent as a present to Conde Mellor, Prime Minister to the King of Portugal; but of the whole case sent to Lisbon one tree only survived to be the parent of the Orange trees of Europe. Beddington, in Surrey, was their English nursery, under the fostering care of Sir Francis Carew; they had been growing there in open ground, under a movable covert, for more than a century, till they all perished in the great frost of 1739-40.

It is impossible to exaggerate the importance of the benefits bestowed on household economy and industry by the exiles of the Reformation, who sought England as a haven of refuge. On the arrival of the Huguenots in Spitalfields they started the horticultural societies, that quickly provided the country with such luxuries as Cauliflowers, Turnips, Carrots, and Parsnips. Those refugees who settled at Portarlington, in Ireland, were the first to familiarise the British public with the excellencies of the Jargonelle Pear and the black Walnut; and when the Flemings selected Sandwich as their adopted home, their first important work was to turn the land to the best account by flower and market gardening. The celebrated Canary Grass was until then an unknown object in our fields and lanes, and the reputation of the "Sandwich Celery" became celebrated throughout the kingdom. "Common knowledge" is responsible for many mistakes, amongst which Sir Walter Raleigh is credited with

having been the first to cultivate the Potato for the English dinner table. As a matter of fact, it is to Admiral Sir John Hawkins, the great Elizabethan navigator, that we owe gratitude for the first English grown specimen of that important tuber.

The Royal exiles of the Restoration brought with them, on their return to England, amongst other accessories of the kitchen garden, the Bean, Pea, Lettuce, and Asparagus, which were originally grown in the Island of Cos, near Rhodes, in the Mediterranean. Haricots or French Beans were originally native to the East Indies, and with regard to the common Broad Bean, its origin is lost in obscurity, for it is not found in any part of the globe in a wild state. The Tomato, that has been cultivated so largely in England of late years, is exclusively of Peruvian origin, neither it nor the Capsicum being known in Europe till after the discovery of America. Spinach found its way here in the first instance from Western Asia, but the most valuable species has been imported from New Zealand during the past few years. Asparagus and Beetroot originally found their way into our island from the sunny fields of Italy. The discovery of America produced for the gardens of England about 3000 novel varieties of vegetation, South Africa close on 2000, which, combined with constantly increasing additions from Australia and other countries, did fair to endow us with a vast cosmopolitan flora. Many of these will in course of time become thoroughly acclimatised, and should our civilization, like that of Rome, ever suffer an eclipse, future scientists will dispute much more regarding "What are indigenous British plants?" in the year 5000 A.D. than we do about the original habitat of the Apple, the Pear, the Wheat, and the Plum.

Dwarf Phloxes.

It is not many years since the species and varieties figuring under the head of Alpine Phloxes were comparatively few in number, and while the former remain about the same to-day, the latter have increased considerably, bringing new and pleasing shades of colour, while for free growing and flowering they are all that can be desired. These latter remarks apply more especially to the varieties of setacea which enrich our gardens in the spring to some considerable extent. The whole of the varieties of setacea, as well as frondosa, nivalis, and Nelsoni, form dense prostrate cushions, which in May and June are completely hidden by the numbers of flowers produced. Nothing can surpass them for effect in the spring garden, and where this is indulged in to any extent some of these Phloxes should be among the number.

For the convenience of those desirous of securing the most distinct varieties, I will give what I regard as the best, all points considered: atro-purpurea, dark rosy purple, very free and a good doer; The Bride, pure white, with a ring of scarlet spots in the centre, a telling variety, habit very compact, and an abundant bloomer; compacta well bears out its name, and produces rose-coloured flowers freely. Vivid in point of colour is the most effective; it does not produce flowers as large as some, but is remarkable for freedom, while for colour it stands alone; its rigid tufts, studded with rosy scarlet flowers with deeper centre, render it very conspicuous. The foregoing I consider the best and most distinct of the forms of setacea, apart from which there are several which cannot be omitted. Among these Nelsoni stands first, and is covered with pure white masses of bloom, a most charming plant; and frondosa, with rosy pink flowers. All these are very similar in general aspect, quite hardy, and most effective.

But what I regard as the gem of all the Alpine Phloxes is *P. amœna*. It is an excellent plant for effect, and so continuous a bloomer, according to the season, it flowering in April or very early in May, and continues a long time in perfection. I have had this one in flower for six months, and had as fine flowers in October as in May; but to get this result it should be divided as soon as it has ceased flowering, and planted in good rich soil. Attend to watering and so forth, it will speedily recover, and show signs of flowering again. Its full height is 6 inches; the colour of the flowers is a bright pleasing pink, and to see a bed some 40 feet long carpeted with this lovely plant in full flower, is one of the prettiest sights in spring. The only other that calls for mention now is that usually sold as *verna*, but which correctly is *reptans*. It has also been distributed under the name *stolonifera*, but this species has bluish or slate-coloured flowers, while *verna* (*reptans*) has reddish purple flowers. Both plants, however—i.e., *stolonifera* and *reptans*—possess the same habit, hence the confusion probably.

All the varieties of setacea and their allies may be increased by division either in autumn or spring after flowering. Cuttings of all these taken when about 2 inches long—that is, of new growth and with a heel attached, root readily in moist sandy soil, in hand-lights or frames kept close and shaded. *Amœna* may be had in abundance by division after flowering in May, while *reptans* will root readily if the runners are pegged on the surface of the soil, and may also be increased by division.

Every person who takes an interest in the cultivation of these plants should, I consider, take an interest in making the best possible display of them also. By this I mean that they ought not to be content by merely purchasing a plant and letting it do its best. That is not gardening in its truest motives, nor is it likely that the best

results will be forthcoming for such scanty pains. Let all cultivators make the most of the space at command, and few plants form a better starting point than these Phloxes. An amateur can buy one plant, and in three years it may make a good tuft, but if he had put in say fifty cuttings each year in the manner I have described above, and only succeeded in rooting half of them, and potted them singly in small pots, what a grand stock of such he may possess! But amateurs will wonder of what service such a stock may be to themselves, but I will explain. These Alpine Phloxes require to be seen in large spreading masses several feet across, and to quickly obtain these handsome floral carpets they should be increased freely. Established in small pots, and planted out about 6 or 8 inches apart each way, they would soon form a mass of colour such as is rarely seen, and make the garden a perfect paradise.—FLOWER GARDENER.

Notes on Figs.

EARLIEST FORCED IN POTS.—The small but very acceptable Early Violet and St. John's Figs are now being succeeded by Pingo de Mel, White Marseilles, and Brown Turkey. To secure perfect ripening and high quality, watering should be gradually reduced and syringing over the trees must cease, but trees swelling their fruit should be assisted with weak liquid manure twice a week and the foliage be kept clean by syringing at closing time. A temperature of 60° to 65° at night, 70° to 75° by day, advancing to 80° or 85° from sun heat, is suitable, closing so as to increase to 90°, but air must be afterwards admitted to allow the pent-up moisture to escape and prevent the deposition of moisture on the fruit, which settling on the apex is apt to cause decay. This should be avoided by a circulation of rather warm and moderately dry air.

EARLY FORCED PLANTED-OUT FIGS.—Trees started about the new year have the fruit advanced in swelling, and a mulching of sweet decayed manure about an inch thick is of immense service in encouraging surface roots and supplying nourishment not likely to induce grossness. Such mulching, if kept in a moist but not constantly saturated state, and added to from time to time, will be full of active feeders by the time the trees need most assistance, in order to perfect their crops; and some substantial chemical food every three or four weeks, or more distantly according to requirements, will, other conditions being favourable, secure sturdy growth and good results in the first and second crops. Trees in borders of limited extent, and those of short-jointed fruitful habit, will require copious supplies of water or liquid manure. Syringing may be practised twice a day in bright weather, occasionally in dull, maintaining a genial condition of the atmosphere by damping.

During favourable weather the ventilation should be free, with the object of securing stout growth, and thick, healthy foliage. Care ought to be taken to admit all the light possible, duly attending to pinching the growths, rubbing off the superfluous, and thinning out all the overcrowded shoots. The temperature should be maintained at 60° to 65° at night, 70° to 75° by day, advancing to 80° or 85° from sun heat, closing so as to run up to 90° on fine afternoons, but admitting a little air before nightfall, as pent up moisture is deposited on the foliage and fruit during the night, and favours fungoid pests.

SUCCESSIONAL TREES.—Trees started during February or early in March will require attention in disbudding or thinning the growths, regulating the terminal and successional shoots, and stopping the spurs at the fifth leaf. In order to secure a good and certain swelling in the first crop fruit, it is excellent practice to pinch the growths somewhat closely, or to three or four good leaves, and afterwards reduce them by disbudding, so as to prevent overcrowding, repeating the stopping, if necessary, at the fifth leaf. It is not advisable to bring the trees on too rapidly in the early stages of growth, 55° to 60° at night, and 65° by day, advancing to 70° to 75° from sun, with moderate ventilation, and above admitting abundance of air, as it is very important that the foliage be of good substance. When the trees are in full leaf the night temperature should be maintained at 60° to 65°, 70° by day, allowing a rise to 80° or 85° from sun heat, closing early with abundance of moisture.

LATE OR UNHEATED HOUSES.—The trees having had attention in thinning the least fruitful growths and the old and bare, so as to afford space for the successional, it is desirable to allow the shoots for bearing to grow somewhat loosely with their points to the light. Stopping must play an important part in cool houses. Pinch at the fourth or fifth joint on the young wood, which will assist the swelling of the fruit and induce the trees to break and produce short-jointed wood from the base of those in bearing, but do not allow more shoots to remain than can have full exposure to light, reducing them by timely attention to disbudding. Ventilate freely at and above 50°, advancing to 65° from sun heat. The border should be brought into a moist condition if dry, afterwards mulch lightly with short manure. Figs, however, in unheated houses do not require nearly so much moisture as those in heated structures, but an occasional damping will be necessary to maintain a genial condition of the atmosphere, ventilating freely on all favourable occasions, especially in the early part of fine days, so as to secure sturdy, short-jointed wood and well developed leathery foliage.—GROWER.

NOTES & NOTICES

Recent Weather in London.—The weather during the Easter holidays was somewhat changeable, but must be considered generally satisfactory. Both Good Friday (except for the gale of wind) and Saturday were fine, as also was Easter Sunday, except for a slight shower early in the evening. On each of these days the sun shone gloriously, and the wind had not the keenness of a few days ago. Monday was bright with slight showers at intervals; indeed, it was a typical April day, as described in the phrase "smiles and tears," as indeed was Tuesday also. On Wednesday it was very fine and warm.

Weather in the North.—Very high westerly and northerly winds have prevailed during almost the whole of the past week, and a good deal of rain has fallen in heavy showers. Sunday was very boisterous and wet, as was also the earlier part of Monday, but the evening of that day promised more settled weather.—B. D., *S. Perthshire*.

The Land of Daffodils.—Daffodils are being sent away from the South Lincolnshire towns in great quantities, and hundreds of women and young people are bunching the flowers. Despite the bad weather, there has been quite as much bloom sent to London and other centres this season as last. From the Spalding district, where the flowers are very extensively cultivated, last week 25 tons were despatched, 7 tons going away on Good Friday for use in the decoration of churches for Easter Sunday.

Recreation Ground for Bromley by Bow.—The Bromley Recreation Ground of nearly 1½ acre, purchased and laid out by the County Council at a total cost of £6780, was opened recently by Mr. B. Cooper, L.C.C., who said that after waiting many years and contributing much to the parks and open spaces in other parts of London, Bromley had become possessed of a lung. Bromley was one of the most densely crowded portions of the metropolis, where ground could not be bought at a low rate, but he felt sure that the residents would appreciate the outlay of the London County Council in providing such a charming space.

Messrs. T. S. Ware, Ltd.—For many years the business founded by Mr. T. S. Ware, and now being conducted as a limited liability company, has had its home at Tottenham, whence have been despatched many hundreds of thousands of hardy plants, for which the nursery had such an enviable reputation. So extensive and varied was the collection, that it was quite impossible for anyone to visit the Tottenham nurseries without finding something of interest in flower. But the old order changeth, and the headquarters of the firm have gone to Feltham. It was found necessary to move, and this position in Middlesex was chosen. Hardy plant lovers must hereafter, when they want to visit "Ware's," travel via the London and South-Western Railway from Waterloo, instead of from Liverpool Street as has previously been the case.

The Royal Gardeners' Orphan Fund.—Mr. Brian Wynne, of 8, Danes Inn, Strand, London, the secretary, desires us to intimate that the annual dinner of this most meritorious society will take place on Tuesday, May 8th, at the Café Monico, Piccadilly Circus. The objects of the fund are:—To make allowances or grants of money to aid in the maintenance and education of the orphans of gardeners, foremen in public, private and market gardens, and the managers and departmental foremen in nursery and seed establishments. By means of the fund eighty-five fatherless children are this year (1900) being assisted at the rate of 5s. per week until they attain the age of fourteen years, and who, with the sanction of the Executive Committee, may be placed with relatives or other responsible persons, acting as guardians. The committee also has power to grant a sum not exceeding £10 towards apprenticing or otherwise promoting the start in life of any orphan who may be eligible for such assistance; and to make arrangements for placing children elected to the benefits of the fund, either with carefully selected foster parents as cottage boarders, or with the master or mistress of a school or institution, from whom satisfactory security is required for the proper discharge of their duties.

Royal Horticultural Society.—The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, April 24th, in the Drill Hall, James Street, Westminster, in connection with which the National Auricula and Primula Society will hold its annual show, 1 to 5 p.m. A lecture on "The Cultivation of the Narcissus" will be given by the Rev. S. Eugène Bourne, M.A., at three o'clock.

The Journal of the Royal Horticultural Society.—Volume xxiv. of this publication, which has just reached us, is undoubtedly one of the most excellent of the series. It embodies an exhaustive report of the Hybrid Conference which was held under the auspices of the Royal Horticultural Society in July of last year. The excellent introductory address of Dr. Masters, together with the complete text of the several papers prepared by experts, and a list of the principal plants exhibited are given, and form a most valuable addition to the not over-abundant authoritative literature on hybrids. To those specially interested in hybridisation the work will become a necessity; while to others it must prove interesting as well as instructive. The price to non-Fellows is 7s. 6d., and it may be obtained from the secretary R.H.S., 117, Victoria Street, London, S.W.

Royal Botanic Society.—At a recent meeting of the Royal Botanic Society the chairman, Mr. C. Brinsley Marlay, drew attention to some Marie Louise Violets grown in Ireland, and remarkable for their size, fragrance, and colour. He thought it would be of interest if he drew attention to the natural advantages Ireland had for growing plants which liked a limestone soil, and he had often been struck with the extreme delicacy of scent and brilliancy of colour of many plants growing in his garden in Ireland as compared with similar plants grown in England. The absence of sunshine during the summer months owing to the clouds prevented fruit and berries from ripening to the same extent or having the same colour as in England and Germany, but for many herbaceous plants there was no better soil than was met with in the neighbourhood of Dublin between the seashore and the mountains.

Kingston Chrysanthemum Society.—The annual show of this old society for the current year, and it will be its twenty-fourth, will be held as usual in the large Drill Hall on November 6th and 7th. Last year the executive avoided clashing with the first day of the National Society's show, but no one seemed to thank them for it. This year, also, there are one or two immediate local shows that it is felt to be more important not to be in conflict with. The schedule has been thoroughly revised, and whilst the great open class for cut flowers has been omitted, other classes for gardeners, likely to lead to greater competition, have been included. We believe the schedule of prizes, in slip form, is ready, and can be had on application to the new secretary, Mr. W. Hayward, Fife Road, whilst the complete schedule will be issued later.

Royal Agricultural Society.—We are informed that the special committee appointed to consider the question of sites for future shows, in presenting its report recommended that in place of a show in or near a different town each year, it would be much more economical to hold the show in some permanent locality, preferably in the centre of England, which would be convenient for railway access from all parts of the country. The report of the committee was fully considered, but the proposal for its adoption was opposed by Mr. Martin Sutton, on the ground that the council should not make such a drastic change without being sure that they were in touch with their *clientèle*. Mr. Sutton's resolution, however, was ultimately withdrawn, and the committee reappointed, with a view to selecting a suitable site for a permanent show ground.

Mount Vesuvius and Vegetation.—The inhabitants of the district of Somma Vesuviana, on the northern slopes of Vesuvius, writes the Rome correspondent of the "Morning Post," have just had an unpleasant reminder of the properties of the mountain on which they dwell. On ordinary calm days the head of Vesuvius is adorned by a plume of dark smoke, which, when the wind blows from the south laden with moisture, is carried northwards over the slopes of the mountain. During the last long spell of south wind it rained heavily without interruption. The rain in passing through the sulphurous smoke became impregnated with caustic salts, which have destroyed the flowers and young buds on all the trees, and have ruined all the young plants. The Vines alone escaped damage, because, on account of the cold season, their buds are still in a backward condition. The phenomenon is not new, though it is extremely rare.

Gardening Appointment.—Mr. G. Tyler, for the past ten years gardener to C. A. Jones, Esq., Bron Hendre, Carnarvon, South Wales, and late of Craig-y-Nos Castle, Swansea, has been engaged as head gardener to Mrs. J. W. Jones, Plas-y-Bryn, near Carnarvon.

Honouring Miss Eleanor A. Ormerod.—Miss Eleanor Ormerod, the eminent entomologist, who has done so much valuable work in bringing to the knowledge of agriculturists the life history of the several pests which afflict their crops, received the degree of LL.D. at the spring graduation assembly of Edinburgh University on Saturday. Professor Sir Ludovic Grant observed of Miss Ormerod that their roll of honorary graduates in law now for the first time contained the name of a lady. Miss Ormerod's labours had been crowned with such success that she was entitled to be hailed as the protectress of agriculture and the fruits of the earth.

Dollis Hill Estate.—The Select Committee of the House of Commons, of which Sir William Houldsworth is chairman, yesterday afternoon passed the preamble of the General Powers Bill of the London County Council, which includes provisions enabling the Council and the Hampstead Vestry to contribute to the acquisition of the Dollis Hill estate for the purpose of a recreation ground. The only opposed provision of the Bill was one to enable certain land at Battersea, now used as allotment ground, to be appropriated in part as an open space, and in part for the erection of artisans' dwellings. The Committee, in giving its decision on this point, expressed a hope that the County Council and the Vestry would give the allotment holders, and especially the older ones, as much consideration as the circumstances might justify, and thought it might trust them to do this.

Soil Samples.—We have received a catalogue of the first 4000 samples in the soil collection of the United States Department of Agriculture, prepared by Mr. Wilton Witney, chief of Division of Soils. To all interested in soil investigations this publication will be a useful and suggestive work of reference. Not only does the collection contain specimens of soils from the chief geological formations of the United States, it also includes samples from many of the important agricultural districts, and likewise special collections of Wheat soils, and Tobacco soils, from all parts of the world. Remarks are made concerning the collection of specimens, their arrangement and classification, and it is stated that sets of representative soils are arranged in boxes, to be distributed to agricultural colleges and experiment stations, with explanatory text regarding their origin, chemical and physical peculiarities. One object in publishing the catalogue is to suggest exchanges with institutions in other countries.—("Nature.")

Useful Hints by an Octogenarian.—That the occupation of gardening in association with prudent habits of life is conducive to longevity and activity, the frequent contributions to these columns by "D. Deal," and an occasional jaunty "screed," as he terms it, by Mr. Robert Fenn, afford good testimony. There is, however, another octogenarian in the gardening community, the bearer of a familiar and much respected name—James Dobbie, the founder of the enterprising firm that worthily bears his name at Rothesay. Mr. James Dobbie was for some years a gardener and a good one—a deep thinker and thorough worker. Though eighty-three years of age his eye is still clear, his hand firm, and his arm strong enough to enable him to enjoy a "good day's work with the spade" in his cherished garden at Tor Castle, Craigmere, Isle of Bute. Thinking some records of his fifty-five years' practical experience might be useful, he has embodied them in a sixpenny pamphlet of thirty-two pages. He treats of the importance of shelter for almost everything that grows in garden and field. He seems to have been a pioneer in supporting fruits in nets for their longer retention on trees, and the consequent gain in size and weight for exhibition, as he also was of raising Onions under glass and growing large bulbs thirty-three years ago. He tells of growing Leeks in tubes for winning prizes, also of his method and success with various other crops. Nor does he forget the enemies that beset his path—the underground pests, such as wireworms and millipedes; the night prowlers—slugs and snails; the leaf eaters and sap suckers—caterpillars and aphides; the "rusts" of Parsnips and Parsley. He has a word about them all, and explains his easy methods of conquering them. Mr. Dobbie, in short, covers a wide field in concise form with the object of being helpful, and his unpretentious pamphlet may be fairly described as a veritable *multum in parvo*.

French Colonial Garden.—The Colonial Garden established at Vincennes last July is rendering important service to the French Colonies. M. Dybowski, the Director, informed an interviewer that he was at present engaged in studying the Ko-sam plant, which had been found to be a marvellous remedy against the dysentery prevalent in hot countries. A discovery made at the garden was that *Eucomia almoides* contains 28 per cent. of guttapercha. Plants have been sent to Tonquin, Annam, and North Africa, and it is confidently hoped that very important results will be attained. Incidentally M. Dybowski found that the bark of Indiarubber trees contains 5 per cent. more rubber than the leaves and branches. All the Governors of the French rubber-producing Colonies have been informed of the fact. The bark has hitherto been thrown away.

London at Play.—The first bank holiday of the year passed off pleasantly and safely. London's millions had a full day of play and pleasure. A hasty bird's-eye view of London making holiday is presented by the following figures:—Kew Gardens, 70,000; Crystal Palace, about, 101,651; Alexandra Palace, 63,000; Hampton Court 23,000; Wembley Park, 8,500; Hampstead Heath, 110,000; Epping Forest, 120,000; Waterlow Park, 25,000; Highgate Woods, 30,000; Zoological Gardens, 33,883. It was a truly April day. Sometimes it was raining, sometimes the sun was shining brilliantly, and sometimes both kinds of weather synchronised. The showers were heavy while they lasted, but the sun had by far the best of the encounter upon the whole, and the great, good-humoured crowds everywhere looked as if they had no fault to find with the weather or anything else.

A National Rose Day.—Respecting the proposal to establish a National Rose Day, "F. R. H. S." writes as follows in the "Surrey Comet":—"Seeing St. George is a comparatively unknown quantity in English sentiment, and that Queen Victoria is a very practical factor in sentiment and patriotism, the saint should be ignored in the future as in the past, and so noble a woman and queen as is her Majesty be the subject of the proposed Rose celebration. It fortunately happens that the anniversary of Queen Victoria's coronation, which took place in 1838, falls on June 28th, and right in the midst of our Rose season of flowering. It is a time of the year when Roses are everywhere, and can be had by the humblest as well as by the richest. The Rose is peculiarly a British flower, as our woods and hedge-rows show, and from these native species have come most of the beautiful varieties we grow in our gardens. There would also be particular charm in this universal adoption of the Rose as a floral emblem in honour of our illustrious Queen, that far back in English history the wars of the Roses, red and white, showed how bitter racial animosity divided England, and now in wearing on June 28th Roses of all colours would show how the old divisions and hatreds had been healed in this mode of celebration of Queen Victoria's reign. We must not forget also that the present reign is the longest known in English history, and it has proved to be in very many ways by far the greatest and most progressive era of all time. Long after the Queen has been gathered to her fathers the Victorian era will be regarded with wonder and veneration. Were it universally agreed to establish a Victorian Rose Day on June 28th in this and succeeding years there can be little doubt that it would be universally observed.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
April.										
Sunday.. 8	N.N.E.	deg. 42.2	deg. 39.4	deg. 47.0	deg. 37.2	ins. —	deg. 43.2	deg. 43.6	deg. 43.9	deg. 32.5
Monday.. 9	E.S.E.	38.1	37.8	54.8	29.8	0.01	42.2	43.6	43.9	22.6
Tuesday 10	W.S.W.	50.3	44.3	55.5	37.8	0.10	43.8	43.6	44.1	27.6
Wed'sday 11	W.S.W.	53.7	49.9	57.5	42.9	0.06	45.5	44.2	44.2	39.1
Thursday 12	W.S.W.	51.8	45.6	57.2	44.9	—	46.7	44.9	44.3	37.9
Friday .. 13	W.S.W.	51.5	43.8	58.2	46.6	—	47.9	45.5	44.5	40.4
Saturday 14	W.S.W.	49.9	47.2	63.4	41.9	—	47.4	46.2	44.9	33.2
MEANS ..		48.2	44.0	56.2	40.2	Total 0.17	45.2	44.5	44.3	33.3

The weather during the week has been generally dull with south-westerly gales, which were unusually strong on the 13th inst.



The New Chiswick.

WHATEVER may be the nature of the reception given to the proposals of the Council of the R.H.S. at the Fellows' meeting on Wednesday next, and it is hoped that the matter will be discussed on its merits, and not on any local or personal grounds, it may interest some Fellows to learn that whilst the nearest railway station to the proposed site for the new gardens at Limsfield, Oxted, is twenty-one miles from London, yet trains run there very frequently and rapidly. Thus, besides some half dozen from Charing Cross and Cannon Street daily by South Eastern Railway, there are about twenty-four each way daily from Victoria and London Bridge on the London, Brighton, and South Coast Railway. A train is timed to leave Victoria at 10.40, reaching Oxted at 11.27, another at 11.15, arriving at Oxted at 11.52, only thirty-seven minutes' run; another leaves Victoria at 1.30 P.M. and arrives at Oxted at 2.22. These are fairly fast trains, but even the stopping trains do the run in all cases under an hour. The return trains are also quick. This will enable Fellows to understand that whilst the ride is a little longer than has been the rail ride to Chiswick, it is not one that occupies much more time, and is through beautiful country. The Limsfield site is also in a most charming district, and a visit to it in due course will be amply repaid by the delightful air and views obtainable. It is hoped that should the site be fixed upon by the meeting in accordance with the desires of the Council, that the latter body will not only endeavour to secure special cheap rates of transit to and from London for Fellows, but also will do the same with the proprietor of the livery stables adjoining Oxted Station. —A. F.

The Old Chiswick.

IN writing under the now familiar title of the "New Chiswick" on page 307, a correspondent has some pertinent remarks on the historic old garden that would now seem to be doomed. Knowing something about this garden, I cannot help feeling sorry on observing a tone almost of rejoicing by one or two writers that its end appears to be so nearly approaching. If its abandonment is really necessary, I am one of those, and there must be many, who can only regard the fact with extreme regret.

It seems to be taken for granted, though I do not remember seeing any explicit statement to that effect, that the lease of the garden from the Duke of Devonshire, now shortly expiring, cannot be renewed on something like the existing terms. If that is so it would seem desirable that it be made clear, as it would do something to reconcile those who cannot view the abandonment of the famous old garden with complacency to the inevitable departure.

If the great change is simply based on the alleged "exhaustion" of the land it may be fairly asked if all has been done that might have been done, or that could be done to restore its condition? That it has been badly treated in the past can scarcely be disputed. Not so many years ago practically no manure was supplied, and the late superintendent had to trench a little deeper and deeper to get a film of fresh soil to support the crops as well as he could. That was before the present Council was responsible for its condition, and they certainly have in some respects improved the garden; still they have not been over-generous in the labour supply, and perhaps more substantial work has been expected from the "students" than has been done by them.

But accepting all the drawbacks, including "exhaustion," fogs, smoke, and everything else, it can scarcely be said that the old garden has militated against the prosperity of the society. In no period has there been such a great increase in Fellows as during the later years of Chiswick, and it would be interesting to know how many of these are residents in the locality, also if these are expected to remain supporters of the society when the garden is relinquished.

But while Chiswick has strengthened rather than weakened the society in that respect, the great accretion of Fellows has been mainly due to the Temple Shows and London meetings. When this fact is remembered, the opinion of the correspondent on the page above referred to seems not unnatural—namely, that a proper hall in London would be more in accordance with the wishes of the Fellows as a body than any new garden which very few indeed of them could visit.

That a suitable London building is very greatly desirable no one can deny. The president rarely makes a speech without admitting this, but leaves the question by what seems to have become habitual with him, in casting a bait for a millionaire. If Sir Trevor has some good reason to expect a "catch" his treatment of the subject is understandable.

The present building was only regarded as a makeshift, and it is likely to become more and more unsuitable. Then the time may come when there may be a check in the influx of Fellows, and at least the hundreds who have joined through the London gatherings are entitled to a large share of consideration.

Large numbers of these cannot be expected to care for a large and costly garden two or three miles from a station in Surrey, nor are they likely to be impressed with the high-sounding title of a "School of Horticulture," or to be convinced that the benefit resulting from it will justify the outlay involved. In a matter of such great importance, of leaving historic old Chiswick and embarking on a new enterprise, which, so far as the general body of the Fellows know, is of a speculative character, it would surely not be unreasonable to explain the whole scheme fully at a preliminary meeting, and afford time for the project to be considered in all its bearings before a final decision is arrived at. A month would not be too long for this. The matter is one of too great moment to be settled in a perfunctory way at a formal meeting at which, perhaps, not more than 1 or 2 per cent. of the Fellows may be able to attend.—A LOCAL FELLOW.

A National School of Horticulture.

"ANOTHER FELLOW" seems to think that the providing of a school of horticulture is work for the Government. As there are in Great Britain so many industries, all of which would equally clamour for a national school did the Government promote one specially for horticulture, we can well imagine the confusion that would result. If horticulture needs a national school, then I cannot conceive of more fitting work for the Royal Horticultural Society, established, it should not be forgotten, by Royal Charter, that it might be the leader in horticultural work in the kingdom. The question really is less whether what is proposed is the proper work and duty of the R.H.S., for that body has obligations to horticulture that are illimitable, yet bounded by capacity; but whether such a national school of horticulture is needed. Now something of the kind has long been asked for in many directions. Possibly even those who have thus asked for such an institution may not have thought out fully the possibilities or constitution of the same, but I cannot conceive of anybody more entitled to originate and assist in the conduct of such an institution than the Royal Horticultural Society.

Donbtless many persons have leaped to the conclusion that it is the council's intention to organise such a school alone; that is of course a great error. The notice of the meeting to be held in Victoria Street on the 25th clearly states that what is purposed in relation to a national school is so intended in co-operation with important public bodies, even including the Government Department of Agriculture and County Councils, and whilst the R.H.S. may obtain great advantages from the formation of such a school, the pecuniary obligations involved may be light. What seems possible is that with the aid of these various outside and important authorities there may be established at Limsfield the finest horticultural school in the world. And if that should result it will be much to rejoice over.

I hope, in relation to such a school, no one imagines that a few years' tuition and study at it can turn out capable gardeners. That would be too absurd. No matter how clever or capable a young man may be, he must, in addition to his college course, have several years' experience in market establishments, nurseries, and private gardens to make him fully qualified to undertake any responsible charge. But it should be evident that any youth who can have some three or four years' training at such a national school should possess elementary advantages far in excess of those a youth can obtain outside of such a school. I some time since showed how greatly we needed well-trained fruit growers; indeed, it is in connection with market culture of fruit and allied products that training is most needed, as just now there are far more demands for qualified youths in this direction than in private gardening.

Practically private gardening is an overdone vocation. It is far too crowded as it is with excellent and wretchedly paid men. It is in the direction of helping horticulture to become a national industry that we need the proposed school. But it must be a very practical school. Some such of so-called collegiate status have been wretched failures where pupils have had an easy life, wasting valuable time in sports and pastimes, and in performing trivial work perfunctorily. At any national school students must be compelled to realise that work is for them a grim reality. In that respect a heavy responsibility would rest on the authorities.—A. D.

Apple Norfolk "Biffin."

IN your issue of March 29th I see a paragraph on the Norfolk Biffin, pronounced as spelt. I have known the Apple over sixty years, and never heard it called Beefing by a Norfolk man. It is not now much grown, as cooks do not like it, and it is useless as a cider Apple. It is a grand Apple for drying, to be used as dessert. Fifty or sixty years ago it was in great demand for that purpose, and fine samples fetched a high price. I grow them for that purpose now. In "Nuttall's Dictionary," 1891, page 69, it is spelt Biffin.—H. T. H.

Cinerarias at Impney.

I ENCLOSE a photograph of Cinerarias in flower at Impney, the residence of John Corbett, Esq., near Droitwich. The plants have been grown from seeds supplied by Messrs. Sutton & Sons, and the photograph shows that the "strain" is equal to the cultivation. The plants (fig. 91) are dwarf and robust, the latter quality only being present in Cinerarias when they have been well nourished and kept free from aphids. The heads of flowers range from 18 inches to 30 inches across, and most of the individual blooms are 3 inches in diameter. The colours vary from white to deep purple, with intermediate shades of mauve, pink, deep crimson, and blue.

too stiff and formal in habit to be considered truly artistic, yet its masses of colour cannot be well replaced at the same cost of labour and money.

Cinerarias, as their leaves suggest, delight in light and rich soil, abundance of water without stagnation, and a position where they can obtain plenty of light and fresh air, and a temperature between 40° and 50° in winter, and 50° to 60° in summer. They are usually ruined in their youth through an insufficiency of food and water, which causes a premature formation of flowers, then good-bye to hope of fine plants. Young plants should be placed in larger pots before they become in the smallest degree root-bound, and this ought to be done from time to time until the plants are in the pots in which they are intended to flower. The same remarks are equally appropriate to most flowering plants under pot culture.—J. UDALE.

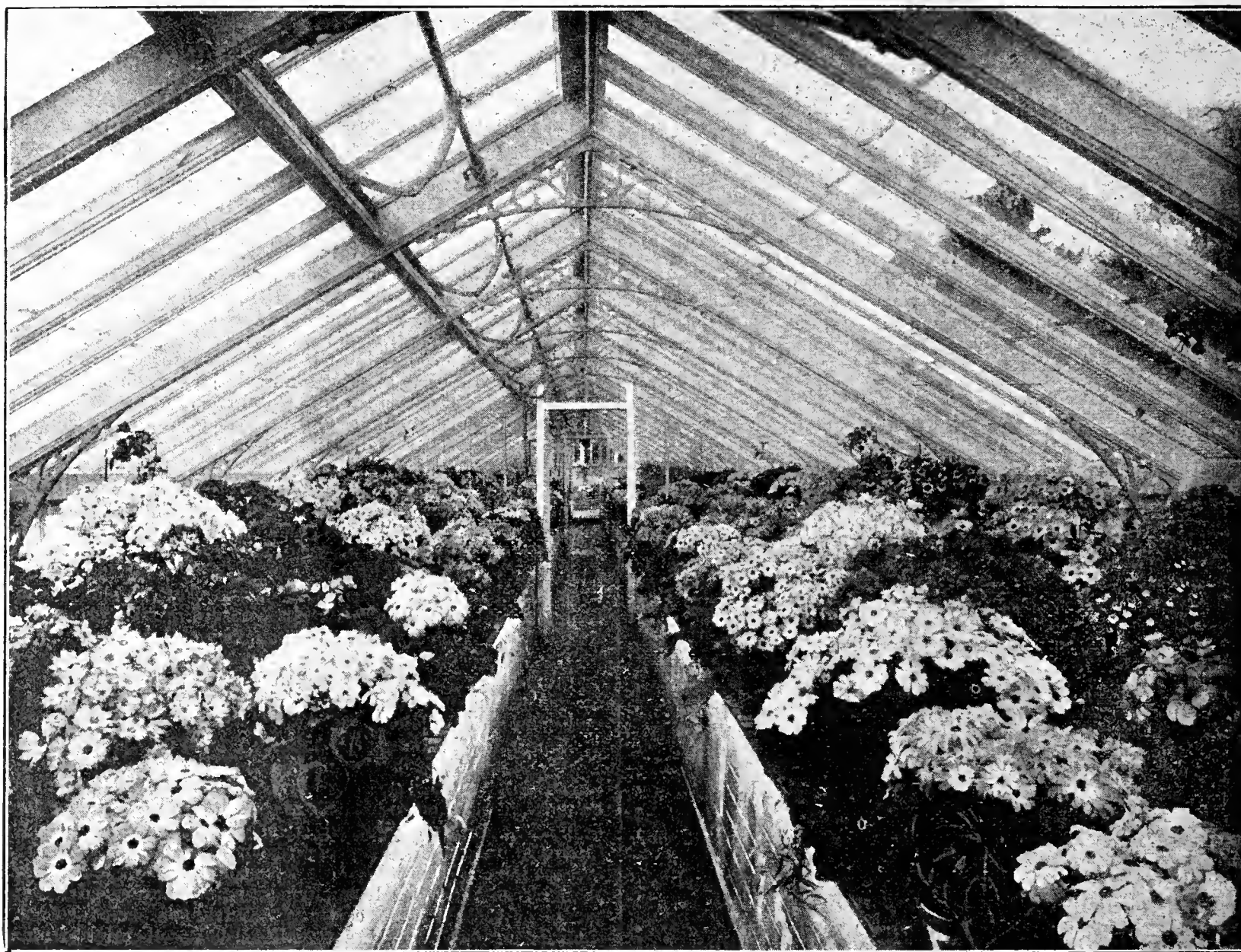


FIG. 91.—CINERARIAS AT IMPNEY.

The photograph shows the Cinerarias growing in two divisions of the plant houses. The range is span-roofed, 100 feet long by 12 feet wide, and is in three divisions, the third being occupied chiefly by Orchids, a class of plants to which Mr. Corbett has recently become partial, and is represented at Impney at present by healthy examples of Dendrobiums, Cattleyas, Laelias, Cypripediums, and Odontoglossums.

Cinerarias are very easily grown, given food, water, light, cleanliness, and coolness; but if one of those factors be absent the presence of the remaining four will not insure success. Mr. Jordan and his clever and painstaking foreman, Mr. G. Giles, have provided the five essential conditions, and have achieved a well-deserved triumph. The notes and articles which have recently appeared in the *Journal of Horticulture* prove that there is a re-awakening in regard to the value of the Cineraria as a decorative flowering plant; and although I think it is

Anthuriums.

THE spathes of Anthuriums varying in colour from pure white to deep crimson make them remarkably showy and worthy of attention from all lovers of plants. When a collection is grown the plants produce when carrying their spathes an appearance at once novel and attractive, and they serve the gardener many a good turn for various decorative purposes. Of course it is not given to every gardener to have a stock such as that so admirably grown by Mr. W. Bain for Sir Trevor Lawrence, Bart., V.M.H., Burford Lodge, Dorking, but they are always valuable. At Burford one may find practically all the finest Anthuriums in cultivation, and their beauty has been demonstrated over and over again when the plants have been exhibited at the Drill Hall. Some produce immense spathes of self colours, and others are most chastely

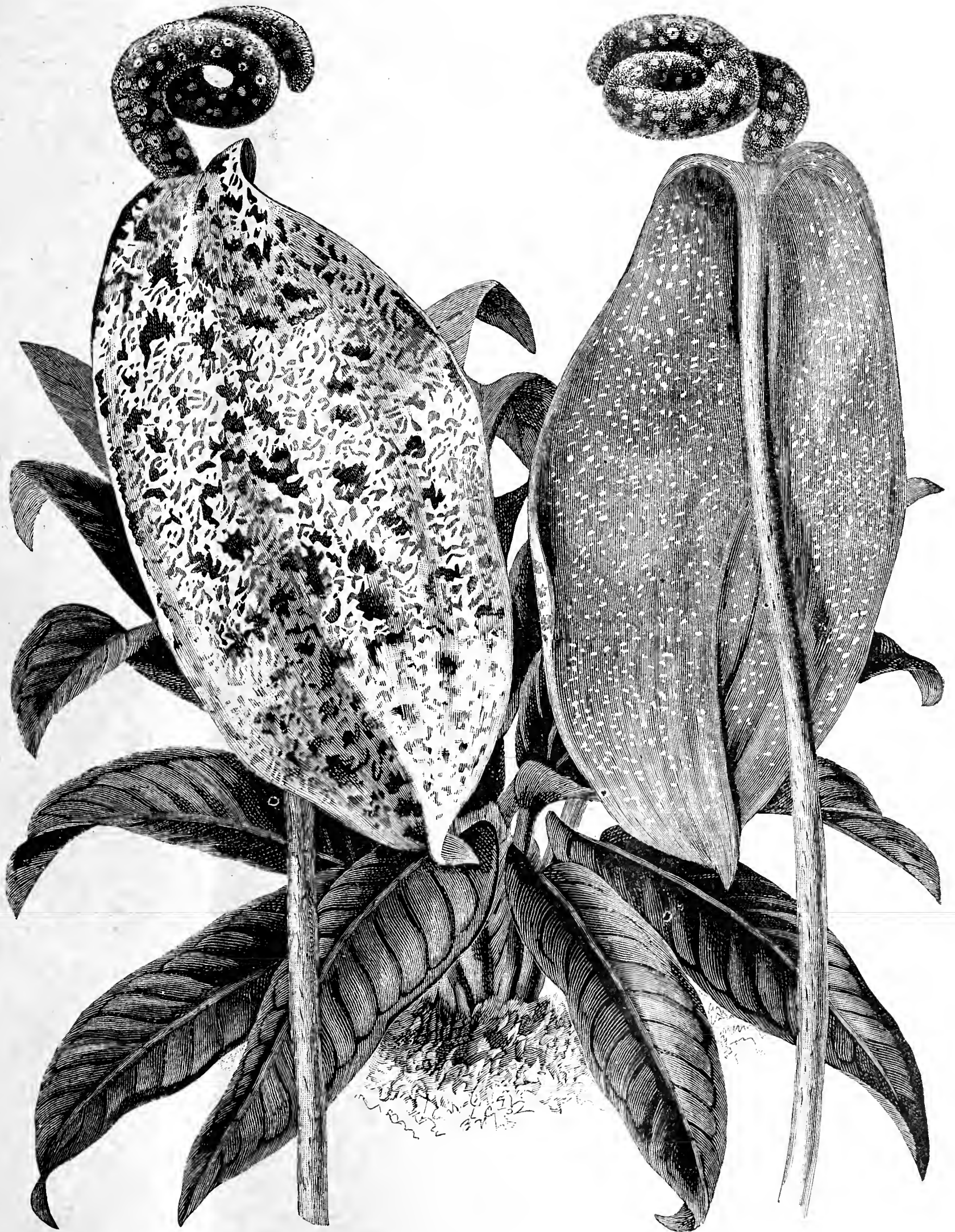


Fig. 92.—ANTHURIUMS

spotted and blotched with brilliant rose on a pure white ground or the reverse (fig. 92), while still more have small spathes with gorgeous colour and floriferousness as their chief recommendations.

Apart, however, from the species and varieties that are cultivated for the beauty of their spathes we have others with noble foliage, and of which *Anthurium Veitchi* may be mentioned as typical. This is undoubtedly, when well grown, one of the handsomest large-leaved plants in cultivation. These, however, must have abundance of room to show off their good points, and perhaps this is one reason why plants are not more commonly seen in gardens. Grown in large tubs standing in some conspicuous position they never fail to attract attention from everyone, and as a rule they are much admired. Until the plants of the fine-foliaged *Anthuriums* have attained to considerable size annual repotting is desirable, using a mixture largely composed of sphagnum moss and fibrous peat. When, however, the plants are in large receptacles this practice is not generally adopted owing to the labour entailed, and it is not really necessary provided the pots or tubs were efficiently drained at the outset, and that great care is always exercised in watering.

Reverting to those which are cultivated for their spathes, it may safely be said that *A. Andreanum*, *A. Scherzerianum*, and the many hybrids, are all worthy of extended culture, but as the brilliant *A. Scherzerianum* is perhaps the most popular, the succeeding remarks may be taken as applying more particularly to this section. Broadly speaking, this plant occupies a position in our stoves in summer similar to that of the *Poinsettia* in the winter. They, too, are like the last-named in another respect, for though really stove plants, they are exceedingly useful for the embellishment of the conservatory. The plants are much less tender than was at one time supposed, and although considerable heat is required to bring them to perfection, they are quite safe in the conservatory during the flowering season, while a high temperature is not essential during the resting period. I look for the time when a collection of Flamingo Flowers, as *Anthuriums* have been called, on account of their gorgeous colour, will be found in every garden where gay flowering plants are required. *Anthuriums* should not be grown merely to represent the species or simply to add to the collection, but, where conveniences permit, should be cultivated by the dozen, according to the demand for decorative plants during the spring and summer months. For associating with Ferns nothing can be more effective for room and corridor decoration, and they will not suffer nearly so much under these circumstances as do many stove plants.

The cultural details are very simple. At the outset it must be borne in mind that the plant is an epiphyte, being found growing on the trunks of fallen trees where Mosses and other Cryptogams vegetate, and care must therefore be taken not to pot the plant too low or in too close a compost, as has sometimes been done in the past. The fact of its growing on trees in its native habitat suggests the methods of procedure for its successful cultivation in this country. A suitable compost is lumpy peat, sphagnum, leaf mould, charcoal, and sand, to be mixed to form an open fluffy mass. For small plants pots must be used; but they should be more than half filled with drainage, to be covered with a layer of moss, and the plant be potted high above the rim, after the manner of Orchids. For large plants pans are preferable to pots. About four to six weeks after potting, when the roots are showing through the surface, cover with green flake moss, into which they will penetrate freely. The plants should have a high temperature at starting, and be frequently syringed in preference to watering.

Anthuriums generally grow slowly at first, but when once established they are rapid in their movements, especially when assisted with liquid manure. That made from horse droppings has been found to assist the plants materially; cow or other cooling manures are, no doubt, equally useful, but guano is not recommended. An average temperature of 65° is suitable, but they are capable of enduring a much lower temperature, and will also flourish in a higher one. They have been seen luxuriating at 80° to 90°, and looking quite happy in 50° to 60°, and have further been known to be wintered in a house that was commonly down to 45°. There is, however, abundant evidence to suppose that this plant is not delicate and tender, and that it may be grown in any garden which has convenience to ripen Muscat of Alexandria Grapes. The rich scarlet spathes of *Anthurium Scherzerianum* render a healthy specimen a magnificent object, and it is a blaze of beauty over a long period. In young plants the spathes are rather small, but they increase in size as the plants gain in strength.—J.

Amaryllises at Chelsea.

WITH many people perhaps it will be a matter for speculation as to when the old name will go to the wall and the newer one of *Hippeastrum* be brought to the fore. That the latter is the more correct no one, it may be assumed, cares to dispute; but when a very beautiful class of plants has become familiar to growers by one name, it is no easy matter to oust it for a fresh one that is even longer and more unwieldy. One might say with the Bard of Avon, "What's in a name?" particularly when reference is made to such splendid plants as these. They are not plants that are found in every nursery or every garden, but in the latter, at any rate, they ought invariably to be grown, as they provide such boldly handsome flowers as cannot be seen in any other family. No better illustration of their effectiveness could be found, or need be desired, than is provided by Messrs. J. Veitch & Sons, Ltd., at the Royal Exotic Nursery, Chelsea. The *Amaryllis* or *Hippeastrum* exhibition there has become an annual event, and one which behoves every horticulturist who can find the time and opportunity to see.

The large span-roofed house that affords them accommodation is generally a magnificent sight by the middle of March, but this year the plants were fully three weeks later in attaining to perfection. Day after day the buds remained in one condition, and some of them continued thus over such a long period that they could never reach the highest state of excellence. There were, however, at the time of my visit hundreds of spikes carrying flowers of splendid substance, form, and colour. Rarely, indeed, have the plants presented a better appearance than this year. One observes, too, in addition to the greater range of colouration that the skill of Mr. John Heal has brought into the flowers that the foliage now comes with the spikes to some considerable extent, whereas only a few years ago the leaves were decidedly later. This combination materially enhances the general effect, as the leafage is very handsome in itself; the green colour is rich and acts as a most desirable foil to the gay flowers.

As with other florist's flowers hybridisation at the outset and subsequently cross-fertilisation has transformed the plants from a comparatively uninteresting, because restricted in colour, family to one of the greatest value from a decorative point of view. We now see as we take an elevated position at one end of the structure peculiar colours and shades that were unknown and possibly undreamed of only a few short years ago. These most desirable additions are the result of unremitting care and patience on the part of Mr. Heal, and there is probably no firm that can claim to have done one tithe as much as Messrs. Veitch & Sons in the development of the *Amaryllis*. Each year brings something new, and though the long sought for yellow variety is not yet an accomplished fact, one may see faint traces of its presence in at least two varieties; it is one of those colours that may or may not be secured, but one thing is quite certain, which is that if it never comes it will not be for the want of trying.

Amidst such a plethora of excellent varieties it is no easy matter to select a dozen or so and say that they are the choicest of the choice. One has to take at least four points into consideration in appraising the merits of an *Amaryllis*, and these are—1, colour; 2, form; 3, substance, and 4, size. To some persons, perhaps, the last named attribute would carry a considerable weight, but one must always bear in mind that a small flower may comprise the other three essentials, and that the chances are that increased age and strength in the bulb will bring commensurate increase in the magnitude of the flower. In some, however, such as Jas. H. Veitch, we find the combination of every excellent point, and have a perfect flower. The colour towards the outer extremities of the segments is very intense velvety crimson, deepening in the throat to a rich blackish crimson without the slightest suspicion of the green tint of which traces are found in many of the flowers. It is regarded at Chelsea as one of the finest dark varieties that has ever been raised. It is a noble flower in all its parts. In striking contrast to the last named is *Sostrata*, which is brilliant orange-red in colour, and while it has not the size of Jas. H. Veitch, it is of fine form and stout texture. Another dark variety that commands attention is *Merula*, the peculiar shade of which is most difficult of description. In a single word perhaps the best colour to name it is magenta, but it would require an artist to give a correct portrayal in words.

Handsome as are the dark *Amaryllis*, no one could possibly fail to admire the chastely beautiful lighter flowers. One of these, named *Iphis*, is a pure white save for the flush of delicate green that pervades it. *Zephyr*, scarlet rose with white margins, is one of the most charming, while *Leo*, white with rose on the upper portion of the flower, is likely to take the popular fancy. Other light varieties of undoubted merit are *Cupid*, rose and white; *Lycius*, bright rose with a considerable amount of white; and *Titan*, white and crimson. Though rather a small flower, *Zehina*, a brilliant orange-scarlet, is very fine, as also is *Nazara*, dark crimson, but the flower of the latter is of considerable size. *Xantho*, a deep velvety red, is superb, and the same may be said of *Laverna*, which is deep crimson. As a scarlet *Theodora* will not be easily surpassed, as not only is the colour good, but also the form, substance, and size. Of fine shape is *Medores*, which is of a peculiar brownish red shade, and with it this brief list must be closed. Let those who would like to see them remember that "time flies fast," and that the day will soon be here when the Chelsea *Amaryllis* will have passed to their rest for another season.—F. W. H.



The Delights of Gardening.—Everyone who has once tasted the real delights of gardening returns to it with zest. Tranquilly pursued it gives, says a contemporary, a certain richness to life and thought, a wholesome basis for intellectual labour. It is a common bond between the wise and the ignorant, a pursuit wherein men of different station can interchange rôles, and mutually impart knowledge. Rivalry is of the friendliest. The cottager's Rose may surpass that of a duke, and the interest of one in his specimen be as keen as that shown for the flower of the other.

Bulbs in Hyde Park.—The displays of spring flowering bulbous plants in the London parks, which are so eagerly looked for by all visitors, are now rapidly advancing in beauty. In the many beds that flank the walk running parallel with Park Lane the bulbs are flowering handsomely, and will be a source of delight to thousands of visitors during the coming weeks. Both the spring and summer bedding in this park are invariably exceptionally handsome, and many designs may there be noted for subsequent use in private gardens. The bulbs in Victoria Park are decidedly backward.—F.

Garrya elliptica.—I was pleased to see the illustration (page 288) of this neglected shrub, and was much interested in the accompanying remarks. When looking round the gardens of a friend a short time back I observed a plant growing on an east wall, and was informed it produced catkins 8 or 9 inches long with great freedom every year. The plant is worth growing as a shrub in the open or trained on a wall, not only for the sake of variety, but also for its unique appearance. It thrives in a mixture of fibrous loam and burnt refuse, annually top-dressed with leaf soil. I have seen beautiful specimens that have been treated as indicated.—C.

Overdoing Gardening.—I went to stay at a very grand and beautiful place in the country, where the grounds are said to be laid out with consummate taste. For the first three or four days I was enchanted. It seemed so much better than Nature that I began to wish the earth had been laid out according to the latest principles of improvement. In three days time I was tired to death; a Thistle, a heap of dead bushes, anything that wore the appearance of accident and want of intention was quite a relief. I used to escape from the made ground and walk on the adjacent goose common, where the cart ruts, gravel pits, bumps, coarse, ungentleman-like grass, and all the varieties produced by neglect were a thousand times more gratifying.—SYDNEY SMITH.

What Plants Require in Feeding.—There is yet a great deal to be learned regarding the positive influence of feeding various crops; yes, and even the different varieties of one plant respond differently to the application of fertilisers and water. These and similar questions afford good opportunities for investigation by experiment stations. At a meeting of the New Jersey Horticultural Society one of the most instructive papers presented was that detailing the work along these lines now in progress at the State Experiment Station. The excellent results that have been produced by the use of yard manure do but confirm the practical experience of so many. But the end is not yet, and the work merits the attention of growers everywhere. A further line of inquiry, and one not yet sufficiently advanced to be reported on is in connection with the tree fruits, from which we anticipate some important data. This is a study of the annual drain upon the soil for the essential elements of plant food. This was begun in 1896, when the trees were set; at the end of the season one tree of the several kinds of fruits was defoliated. The amount was recorded and a sample analysed at the station laboratory. The annual growth of these trees also is measured and recorded, and when trimmed, the amount removed is measured and samples taken for analysis. As the trees come into fruiting the fruit will also be sampled and analysed. This will be continued annually for a time, and "American Gardening" believes that at the end of a few years there will be in all probability very important facts regarding the growth of trees, and their annual needs as they develop and come into bearing.

Sugar Beet.—We learn that under the auspices of the Sugar Beet Committee of the Central Chamber of Agriculture, a limited number of experiments are to be made during the coming season in the growth of this useful vegetable. Oxford, Kent, Hants, Hereford, Suffolk, Beds, Wilts, Berks, Worcester, Lancaster, and Warwick have been selected as the counties in which the trials are to be made, and it has been decided that each plot selected for the experiment shall be at least 1 acre in extent.

Almond Trees.—The chief arboricultural attraction of the metropolis at the present moment is found in the hundreds of Almond trees whose branches are wreathed with flowers. The lateness of the season has of course affected them, as it has done everything, but though rather later than usual they are none the less appreciated. Thousands more might advantageously be planted in suburban London, where they appear to thrive in a most satisfactory manner. The Poplars in South London are rapidly swelling their buds under the influence of sunshine and shower.—H.

Where Market Gardening Pays.—The value of land under fruit, as compared with shooting preserves, was recently demonstrated, says a daily paper, at a sale at Yarmouth. A market garden occupation at Ormesby, four miles from the town, fetched no less than £1400, representing £280 per acre, the highest price paid for a long time for agricultural land in Norfolk. This was the first lot of the sale. The last lot touched the other extreme. This was a 3½-acre plot at Winterton, a few miles distance, which only realised £25, or less than £8 per acre, though it affords plover, snipe, and rabbit shooting.

Azalea Duchess of Wellington.—At the last meeting of the Royal Horticultural Society I observed, among the several Azaleas exhibited, a variety named Duchess of Wellington. This I thought one of the most charming plants in the whole exhibition. It had not the brilliant beauty of other exhibits, but was rather of a chaster and more refined type. The plant was shown by Messrs. R. & G. Cuthbert of Southgate, who received an award of merit. A Duchess of Wellington belongs to the Ghent section, and has neat flowers of a pale blush colour and with brilliant rose on the upper portion. It is a variety that can scarcely fail to find a wide popularity.—VISITOR.

The Barr Daffodil Cup.—It was most unfortunate that this cup should have been offered for competition on the occasion of the Royal Horticultural Society's meeting on April 10th. The effects of the lateness of the season were demonstrated by the fact that there was only one competitor, whereas there ought to have been at least half a dozen. It is, of course, impossible for anyone to know when the arrangements are made what the weather will be prior to the date chosen, but it seems regrettable that some scheme cannot be formulated by which a fair competition can be secured. There is certainly no honour in winning a prize when there is no other exhibitor; the honour comes with numbers of competitors, and the higher the average quality the greater the amount of interest derivable from the class. Messrs. Barr & Sons offer a cup that is thoroughly well worth the winning, and the keener the struggle the better for all concerned.—DAFF.

Leather Jackets.—These are said to be the well-known daddy longlegs in a grub state, and are so called on account of the toughness of their skins. Like other enemies of the gardener, they are not common to everyone; indeed, while they may be very familiar in one garden they are absolutely unknown in another. Their presence, however, is very quickly felt, either under glass or in the garden, when young plants such as Melons or Cauliflowers are planted in soil infested with them, and it may be said remedies for exterminating them are not many. I have recently had some trouble among Melons planted in newly cut soil, some being eaten off just beneath the surface. A search among the injured plants revealed the enemy lurking beneath the soil close by. Recent experience shows that not until they arrive at an adult or full-grown stage do they seek or take food—tender Melon plants. A lump of turfy soil placed on the bed near each plant acts as a decoy or hiding place for them during the day, and a morning search being instituted will soon clear them out. I have not tried this simple trap for them in the garden, but I do not doubt that it would be equally effective. This little expedient which has done me such signal service might be found useful to others similarly troubled. I cannot say whether old turf stacks are likely to be free from these grubs, or if they are found only in that recently cut.—W. S.



Late Rooted Chrysanthemums.

CUTTINGS rooted in the spring are each year becoming more appreciated, and really for many purposes late-rooted cuttings give the best results. In grouping, for example, there is no comparison between the big three-stemmed plants and those having only one stem bearing a huge single blossom. The latter lend themselves to better arrangement; each specimen can be placed so as to exhibit its cultural merits. Those seen at such shows as the Aquarium are very fine in this respect, for not only are the blooms large, but the foliage is especially fine.

If group arrangements at shows are improved by this system of culture, so too could conservatories be at home. Another consideration is that less time is required in growing the plants and the trouble slight compared to that necessary to obtain big specimen plants. Some varieties are better adapted than others for the production of single-bloom plants, it being well to choose those of a sturdy habit of growth. And in respect to that handsome Japanese variety Mrs. H. Weeks, this mode is the one now generally followed, since its peculiarity of late bud production is more understood. From what we hear of the habit of the handsome new variety Florence Molyncux, a similar plan of culture is advised, and the earliest flower bud a plant shows is secured.

A good time, then, to root a quantity of cuttings is in early April in a cold frame. After being duly potted singly they are allowed to grow about 6 inches high, when the tips of the plants are pinched out, except in the two cases noted above. This heading back is to delay the time each plant shall produce a flower bud, the object being to select crown buds in each case. Potting in the final size takes place before the small ones are root-bound, and then growth goes on without a check. For single stems of course all except one shoot are removed. A stick is fixed in each pot, and the shoot trained as required. A 7-inch pot is large enough for the strongest growers, a smaller size being employed for the more weakly. In the matter of soil and manures the plants require equally generous treatment to those grown in the more ordinary way for large exhibition blooms. These single stemmed plants have other advantages. They require less tying to prevent damage from wind, and being dwarf are easily managed to trap insect pests.

For what may be termed ordinary decorative plants, late-rooted cuttings are advisable. Oftentimes we meet with Chrysanthemums rooted early, but neglected and stunted through want of repotting in early spring. Such plants as these are easily beaten by late-rooted ones, which grow freely, and keep the foliage on to the last in a healthy state. The single-flowered Chrysanthemums, too, lend themselves to late propagation. Neat miniature bushes were last year grown from cuttings rooted as late as May. These in 6-inch pots were admired on account of their usefulness for decoration.

Most varieties esteemed for the big blooms may be cultivated on the one-bloom-to-a-plant system; still those named below are especially suitable because of their dwarfness and ample foliage. The buds, too, appear at a time when they may be secured to produce a well-developed flower. Annie Prevost, white; Belle of Castlewood, blush pink; Chatsworth, white and rose; Dorothy Seward, crimson; Emily Towers, pink, tinted white; Ella Curtis, yellow; G. H. Kerslake, jun., white; Hon. F. W. D. Smith, crimson; James Bidencope, rosy red; J. R. Upton, yellow; Louise, blush; Lord Ludlow, bronzy yellow; Master H. Tucker, crimson; Matthew Hodgson, crimson; Mrs. Barkley, rose; Mrs. Coombes, light pink; Mrs. J. Lewis, white; Mrs. White Popham, pink and white; Madame Gustave Henry, white; Madame G. Bruant, white and rose; Mutual Friend, white; M. Chenon de Lèche, yellow, shaded red; M. Hoste, bluish white; Occana, yellow; Phœbus, yellow; Pride of Madford, amaranth; Robert Powell, bronze; R. Hooper Pearson, yellow; Surpasse Amiral, yellow.—SPECIALIST.

April Potting Chrysanthemums.

THE majority of Chrysanthemums are now growing freely in 2½ and 3-inch pots. In order to continue them in a healthy and vigorous condition it is essential that they have more root room, so that the fibres can freely extend and multiply, enabling the stems to strengthen and the leaves to enlarge, the plants at the same time increasing in height. This growth must, however, be made under cool and airy conditions after the first few days succeeding potting. In a collection of Chrysanthemums it will be found that all do not require repotting at the same time. The most forward will probably be the strong growers which were rooted early. These ought to be

attended to before roots begin to mass round the sides of the small pots in which the plants are growing. This does not imply that roots must not be allowed to multiply freely round the ball of soil, as they should, before moving them into larger pots. The weaker growers do not root so rapidly, hence they may not be ready for a shift at the same time, but all that are in a proper state may with advantage be attended to.

The most suitable size for the April potting are 5 and 6-inch. Let them be clean and dry, and drain moderately well, with one large crock at the bottom, and over that some smaller sized, covering the whole with a layer of the fibrous parts of the compost. The soil ought to be fairly rich, and may consist of three parts of fibrous loam, one part of dried and sweetened horse manure, one part of leaf soil, one part of coarse silver sand, and one part of charcoal and wood ashes. The whole should be thoroughly well mixed several times, and if dry be brought to a moist condition.

It is important also that the plants to be potted should have the ball of soil and roots quite moist, therefore the day prior to potting make a thorough examination of them, watering all that are, or are likely soon to be dry. In potting turn the plants out of small pots, and pick away all the drainage. This will loosen the lower roots. The roots on the side of the ball need not be touched, provided the plants are just in the proper condition for the shift. Loosen the soil on the surface of the ball. Place a little compost in the pot, making it firm, then introduce the plant, arranging it so that the surface of the ball will be half an inch below the rim of pot. Fill in soil, working it down with a potting stick until it is at least as firm as the old ball. Insert a neat stick to each plant, and place the pots in a frame on a hard bed of ashes.

For a few days the frame may be kept close, and during that time no water is needed, but light syringing is beneficial. Water, however, must be applied before the foliage droops. Air should be admitted gradually. When the plants are established, expose them fully on favourable occasions, so that the growths may become hardened to full outdoor treatment in a short time. Stood in a sheltered position they will progress sturdily. On bright days the watering must be carried out as necessary, the freest rooting plants requiring it frequently. Afford plenty of space, as the growth is benefited by a free circulation of air and unobstructed light.—E. D. S.

Flowering Climbers.

CLIMBING plants are not sufficiently utilised in gardens, which can never be complete without its complement of flowering climbers. They are rarely used except for wall decoration; while there are so many desirable kinds and varieties, which if taken up tall poles would have a very charming effect, or trained upon trellises they might be used to hide tool houses, sheds, or any outbuildings from other parts of the garden. In fact, all suitable places about the house and grounds may be thus adorned; even arches at intervals placed over walks might be covered with them, or they may be trained over arbours or garden seats, when the comfort of their shade can be enjoyed in summer, while we admire the grandeur of their floral display, and inhale some of their lavish odours.

Few prettier objects can be found than the beautiful Wistaria, with its pale blue pendulous blooms giving out a sweet fragrance. By training this in different aspects the flowering period can be greatly extended, as in one aspect it may be just coming into bloom when in another it is passing away. Not many hardy plants afford such combined beauty, luxuriance, and wealth of bloom as the various forms of Clematis. Of the several types the Jackmanni section is the commonest in gardens, and the most popular, flowering during summer and autumn in continuous masses on summer shoots. Notwithstanding, however, that the large flowering types are very beautiful, it is questionable in many cases if they are so useful as some of the smaller flowering wild species. *C. flammula* is so sweetly scented that we can well afford to dispense with gay colouring. If planted in any ordinary garden soil it will quickly clothe a verandah, or porch; or if planted at the foot of some tree where the leafage is not dense, it will clothe the naked trunk with a wealth of green foliage, and if allowed to ramble at will, what can be more effective than when the shoots hanging loosely and informally are densely covered with pretty, sweet-scented, white blossoms, which are produced from July to October?

Clematis montana with its beautiful white fragrant flowers which are borne in clusters from the axils of the leaves, is also one of the best hardy climbers. Where bright touches of colour are desirable

C. viticella rubra may be added. The blooms are not large, but they are produced with great freedom from about June to October. It is of very vigorous habit, and will grow in shady moist places, where it would be too cold or too wet for more delicate forms to do well. *C. aethusaefolia* is also desirable. The stems are delicately slender, and the plant attains to a height of 6 to 7 feet. The flowers are produced in great abundance, and are Campanula shaped, and of a yellowish cream colour. Their drooping habit has a very pleasing effect when the plant is in full bloom, which is during August and September. Some of the hybrids, such as *C. Countess of Onslow* (fig. 93) may be advantageously grown in the garden as well as in the conservatory.

While speaking of flowering climbers we must not lose sight of the

in any little spell of mild weather which may occur in the depth of winter. Of climbers which spring up from the roots annually, the best is *Tropaeolum speciosum*, which is grand when seen drooping over a bit of rockwork, or covering a shrub or tree. It does well on a warm wall where it can be allowed to ramble among ordinary wall climbers. The double *Convolvulus* (*Calystegia pubescens*) is not grown nearly so much as it might be, for it is an excellent climbing hardy plant, producing in summer and autumn large rose coloured blossoms. The Everlasting Pea is another valuable ornamental climbing plant, of which many varieties are in cultivation, but we consider the white variety *Lathyrus latifolius albus* a real gem, although it has been much neglected by gardeners; its pure white



FIG. 93.—CLEMATIS COUNTESS OF ONSLOW.

climbing Roses, which are the joy of many a garden. But at the same time we cannot find space in our present article to enumerate any of sorts which have come under our notice. We will pass on to that favourite of every old-fashioned garden, the common Honeysuckle, with its sweetly fragrant flowers. The Honeysuckles proper, or *Lonicera caprifolium*, prefer a rich, moist, but well-drained soil, while the Scarlet Trumpet (*L. sempervirens*) and *L. reticulata*, require a warmer, lighter soil, and more sheltered positions. The blue Passion Flower, and its white variety, Constance Elliot, flourish in well-drained light soils, but they require to be planted in a sunny situation, and cut back to the old wood when the leaves fall.

The common Jasmine is perhaps the best climber for a town garden, and does equally well in the country. The winter-flowering yellow Jasmine should find a place in every garden, flowering as it does

flowers, produced in a loose raceme, are simply lovely. The type *L. latifolius* is also very showy. *L. sylvestris* is similar, but the plant is smaller in all its parts. *L. grandiflora* is not so rampant in growth as *L. latifolius*, but the flowers are very large and showy, having the keel and wings dark purple, and the standard large and broad of a lighter shade.

No hard and fast rules can be laid down in the planting of climbers, for no two gardens are alike. But here we have an infinite variety of plants for the embellishment of the garden. If possible they should be placed where they can have sufficient room to develop their beauty. Judicious pruning to promote vigour, and the removal of old growth will be needed. Climbers are nearly always beautiful—beautiful from the very wealth of vegetation that too often is allowed to run in them.—T. G.



Rose Show Fixtures in 1900.

- June 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Sonthampton.*
- „ 28th (Thursday).—Canterbury and Colchester.
- „ 30th (Saturday).—Windsor.
- July 3rd (Tuesday).—Westminster (R.H.S.), Gloucester, and Sutton.
- „ 4th (Wednesday).—Croydon, Farningham, Hereford, and Reigate.
- „ 5th (Thursday).—Bath and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Harrow and Wolverhampton.†
- „ 11th (Wednesday).—Brockham.
- „ 12th (Thursday).—Brentwood, Eltham and Salterhebble.
- „ 14th (Saturday).—New Brighton.
- „ 18th (Wednesday).—Cardiff.*
- „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
- „ 21st (Saturday).—Newton Mearns.
- „ 24th (Tuesday).—Tibshelf.
- „ 25th (Wednesday).—Newcastle-on-Tyne.†

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Tea Roses.

ANYONE who has noticed the natural mode of growth of Tea Roses will have observed that to thrive at all well they must throw up a continual succession of suckers, first weakly, then a little stronger, and afterwards, if encouraged, stronger still. This, then, is the key to the only right way of growing them, and to make sure that all the suckers shall be of the right sort it is necessary to have the plants on their own roots. I know no reason for growing them on Briars or Manettis. It cannot be to make them grow stronger, for it has the very opposite effect in the long run. It cannot be to enable them to withstand the winter, because if they are killed down to the ground, all is gone but the Briar; whereas Tea Roses on their natural roots down in the ground a foot or two would probably start again from the base in the spring. Nor is it because they are difficult to propagate, for they are as easy to root as Verbenas. If it is argued that it makes them more floriferous, then remember that, with the exception of one or two sorts not strictly Teas, where there is growth, flowers will follow as a matter of course, and the finest blooms do not come on the weakest growths.

One summer I inserted cuttings of the best varieties I then had, including some which are not yet surpassed—viz., *Devoniensis*, *alba rosea*, *Catherine Mermet*, and *Souvenir d'un Ami*. The cuttings were made of the firmest growth of the current year, and placed under hand-lights on the north side of a wall. They soon rooted and started growing without losing much of their old foliage; they were then potted into 4-inch pots, placed in a cold frame, kept rather close and shaded till they started, then gradually hardened, and soon after—probably in September—they were shifted into 8-inch pots and placed outside. They were protected a little during the winter, being in a cold house not by any means frost-proof, and during the next summer were repotted into 14 and 15-inch pots, using soil such as would grow fruit trees well in pots—viz., fresh rather heavy turfy loam, a sprinkling of half-inch boiled bones, a few pieces of charcoal, and a little decayed farmyard manure of good quality dried and rubbed through a sieve. The loam was rough, many of the pieces being half the size of a brick. The following spring I had flowers such as I never saw before, and the plants kept constantly throwing up suckers.

Mildew does not often come spontaneously on plants grown thus without a check, though it often attacks others weaker in nature. When such a case occurs I practise and advise no half measures, but

gather all expanding flowers, place some sulphur with water in a water pot, stir well about, and apply with a syringe in a fine spray to both sides of every leaf in the house whether affected or not, and the first time the sun shines on it every spore will be killed. This is much easier and a far more effectual plan than dusting. The sulphur can be syringed off in a day or two, leaving hardly a trace behind. I do not think sulphur does much good in dull weather either inside or out; it is not at all easy to kill mildew outside in the autumn, when the sun has little power.

Tobacco powder is very useful for dusting whenever there is a suspicion of fly. It is certain death to the fly with which it comes in contact, and if applied in the evening when the sun is not powerful it will not injure the foliage even if allowed to remain on next day. Dusted over cuttings closely confined in a hand-light or bell-glass it will kill every insect whether it touches them or not, but in this case the cuttings must be protected from sunshine.—R.

Planting Flower Beds.

A CORRESPONDENT desires guidance for planting flower beds, but gives no particulars of the surroundings, only that the three beds are situated about 50 yards from the main walk on a slope facing the walk. The pattern is a semicircle, 30 feet across and 15 feet wide, and as the beds are somewhat novel, we give a sketch (fig. 94) of two of the beds, the other being simply a duplicate of that on the left hand. To give a meaning to the beds we have assumed that they are on grass or lawn, A, backed by a shrubbery or clumps of shrubs and trees, B, and the two side ones a background of shrubs, C.

We have also supposed that it is intended to occupy the beds with summer bedding plants. Centre bed, D:—a, *Canna Queen Charlotte*; b, *Zonal Pelargonium Vesuvius*; c, *Calceolaria Golden Gem*, or *Pelargonium Crystal Palace Gem*; d, *Lobelia Bluestone* or *Emperor William*; and e, *Chlorophytum elatum variegatum*.—Or, a, *Begonia*, tuberous, white or yellow var.; b, *Heliotropium Miss Nightingale*; c, *Centaurea*

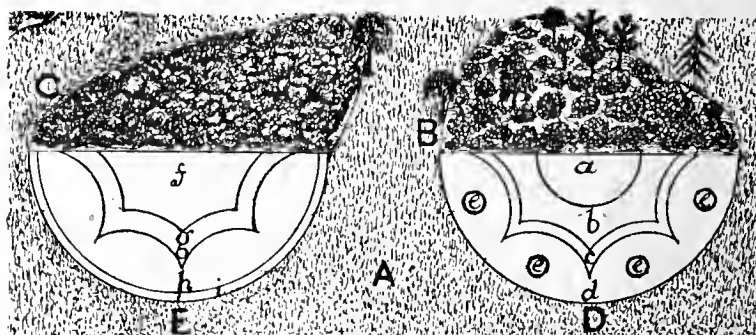


FIG. 94.—DESIGN FOR PLANTING FLOWER BEDS.

References.—A, lawn. B, clump of trees and shrubs. C, group of shrubs. D, central bed. E, one of side beds. Scale 1 inch = 24 feet.

candidissima, dotted on ground of *Viola Cliveden Purple*, or *Viola Pilrig Castle*, blue; d, *Antennaria tomentosa*; and e, *Alternanthera magnifica*.

Two end beds, E, but same design as D; a, *Canna*, *President Carnot*, bronze; b, *Pelargonium*, *Madame Crousse*; c, *Lobelia*, dwarf blue; d, *Koeniga maritima*; and e, *Begonia semperflorens nana rosea*. Or, a, *Pelargonium Henry Jacoby* or *Pentstemon*, red or crimson; b, *Pelargonium Princess Alexandra*, silver leaf; c, *Iresine Lindenii*; d, *Sedum glaucum*, or *Alternanthera paronychioides aurea*; and e, *Echeveria metallica*.

Beds all three alike, design E:—f, *Pelargonium Flambeau*, scarlet Ivy-leaved; g, *Lobelia* dwarf blue; h, *Koeniga maritima*; i, *Alternanthera amœna*. Or, f, *Pelargonium Vesuvius*; g, *Pelargonium Crystal Palace Gem*; h, *Lobelia* dwarf blue; i, *Alternanthera paronychioides aurea*. Or, f, *Begonia*, tuberous, crimson or scarlet; g, *Centaurea candidissima*; h, *Ageratum Swanley Blue*; and i, *Alternanthera magnifica*. Any of these would be effective on a bank especially in large beds, and the arrangement might be varied according to plants at command or taste, those given being suggestive.

The beds are rather large, and the intention may have been to have mixed flowering plants, but this was not stated. They would answer for such plants as *Pæonies*, *Liliums*, *Delphiniums*, various bulbs, herbaceous plants, dwarf flowering shrubs, and annuals—that is, mixed beds. They would, however, be most effective occupied by summer bedding, and in turn by spring bedding plants, these being more striking when viewed from a distance than mixed beds.

Culture of Lettuces.

ALTHOUGH the Lettuce is by no means a difficult plant to grow, the production of large solid heads of crisp leaves is not so general in gardens as it should be. This is to be accounted for in many ways the main cause being sowing the seeds too thickly, and the subsequent crowding of the plants before they are pricked out in nursery beds and finally transplanted in the positions in which they are to develop. It is an evil that no judicious after treatment will altogether remove, although good culture will do much towards securing fairly satisfactory results from plants so neglected.

Lettuces—other points being properly attended to—will succeed in any fairly good soil. Early and late planting should be made in a warm and somewhat dry situation, this being preferable to a cool moist one. But these conditions are highly favourable to the production of Lettuces of the best quality during the summer and early autumn months. Liberal dressings of well decayed manure should be dug into the ground a good spit deep some time before setting the plants in it, although very satisfactory crops are yearly obtained by planting the ground the same day as dug. However, should the manure dug into the ground be of a rank description, it is certainly prudent to defer planting for a few days until the rankness has escaped.

If transplanting is not carried out in due time the plants become crowded in the seed and nursery beds, and poor results are obtained in consequence. Therefore, if the object be to produce examples of good cultivation in the shape of close heads of tender Lettuces, the young plants when a couple of inches high, and before they touch each other, should be pricked out on a border having a south or west aspect in rows about 4 inches apart and at the same distance in the rows, making the soil moderately firm about the roots, and if no rain falls at the time supply water through a rose watering pot to settle the soil about the roots. If the ground be ready by the time the young plants are fit for pricking out they may be placed in rows 12 inches asunder, and at the same distance between the plants in the rows, giving water to settle the soil about the roots, as already advised. Before planting the ground should be trodden and surface-dressed with soot, raking it level, as the Lettuces will do better by being planted in a fairly firm ground, and the dusting of soot will save them from the attacks of the grub, which in some soils is very destructive, eating through the stems of the plants underneath the surface of the soil.

However, very good Lettuces may and are very often grown on Celery ridges during the interval of making the trenches and earthing the Celery plants in the summer. But if plants thus grown are not well supplied with water at the roots during a spell of dry weather thin loose heads of tough leaves will be the result. Where there is abundance of ground the largest, most solid, and crisp heads of Lettuce are secured by sowing the seeds very thinly in drills about 1 inch deep and 12 inches apart, the ground having been previously dug, trodden, and raked level, afterwards closing the soil in drills with the feet, treading and raking it level in the same direction as the drills. In due time the plants should be thinned, first to 6 inches apart, and later to 12 inches in the rows. Thus grown, and being afterwards attended to in the way of giving water at the roots when necessary, the plants never experience the slightest check.

In transplanting Lettuces, which had been previously pricked out as indicated above, they should be lifted and planted with a garden trowel with good balls of soil adhering to their roots, letting them into the ground the same depth as they were before, and making the soil firm about the roots. In making early plantings of Lettuces level the soil well up about the stems of the plants so as to prevent the lodgment of water. But, on the other hand, in making plantations during the summer a slight depression should be left round the collars of the individual plants for the reception of water. Successional plantings, like the sowings, should be made every three or four weeks in the middle of August. The plants raised from seeds sown during the latter month should in due time be dibbled out, those in slightly heated pits at 6 inches every way from plant to plant, drawing every other plant for early use before they touch, allowing 3 inches between the plants in cool pits and in warm and somewhat dry borders out of doors. The plants in cool pits and out of doors must be protected from frost by shutters and fern and similar material. Slugs being very troublesome to Lettuce plants so grown they should be sought and destroyed, subsequently occasionally laying a mixture of fresh soot and lime between the plants and the wall, fence, or edging as a means of keeping them off.

Plants raised from seeds sown in June and July will be ready for cutting in the late autumn and early winter months. The July raised plants will be ready for lifting with good balls of earth, transplanting 3 or 4 inches asunder in a cool frame, placed on a south border, before they are injured by frost, say the end of October. The plants may be placed the same depth in the ground as they were before, giving water to settle the soil about the roots. This should be poured round the stems and roots, so as not to wet the leaves. These plants must have abundance of air in the absence of frost and heavy rains, and always bear in mind that the great enemy to be guarded against in the preservation of Lettuces during the winter is damp.

The only attention required in the several plantations made during

the spring and summer months from the interval of planting to cutting is to keep the plants well supplied with water at the roots during dry weather until they have taken well to the soil, and to keep them free from weeds by passing the Dutch hoe between the rows a few times, an operation that will at the same time promote growth in the plants.

In blanching the heads the object of the cultivator should be to get as great a portion of the leaves of the individual heads of Lettuce as white and tender as possible, therefore recourse should be had to tying up the leaves, but not too tightly, with bands of matting when the heads are nearly full grown. One band of matting tied within a couple of inches of the top of the heads is quite sufficient for each Lettuce.—S.

Royal Horticultural Society.

Scientific Committee, April 10th.

Present: Dr. M. T. Masters (in the chair); Dr. Müller; Rev. W. Wilks, Mr. E. Im Thurn, Mr. Hudson, and Rev. G. Henslow, hon. sec.

Vine Leaves diseased.—With reference to the samples brought to a previous meeting from Gunnersbury, Dr. Masters observed, from further examination, that they were certainly not attacked by red spider, but possibly by mites. There was still some doubt as to the presence of the young condition of *Gloeosporium*.

Oranges striped.—With reference to the Orange brought to a previous meeting, Dr. Bonavia writes further in regard to the criticism on his theory that the stripe did not correspond to a single carpel, but covered halves of two:—"If this be so, I think that fact would seem rather to strengthen my theory, for the law of phyllotaxis [alternation of whorls] would appear to require such a disposition. My view is that the peel and the pulp with carpels are two independent whorls, the former coalescing to form a protective covering, while the latter has its carpels separable." The difficulty in accepting this theory arises from the fact that there is no mark of separation, the spongy tissue being continuous from the ovary cells to the circumference, the latter being charged with oil glands. Secondly, if the superficial layer were "foliar" one would look for fibro-vascular cords running through it, whereas there are none. All that are present permeate the soft tissue. Lastly, if it were foliar it must represent a whorl of stamens; but where such a whorl takes on a pistillate character, they form short horn-like processes around the base only, and not a uniform covering.

Mandarine Oranges striped.—Mr. Hudson brought some fruit which always has slightly raised ridges, on a line with the backs of some of the carpels, and green. They proved to be quite superficial, only retaining the chlorophyll grains, which had disappeared elsewhere.

Acorn with three embryos.—Mr. Saville of Maplestead, Essex, on growing an acorn in water, found that it sent up three stems. They proved to arise from three distinct embryos within the common husk. Such polyembryonic conditions occasionally, but not very frequently, occur.

Douglas Fir diseased.—Dr. Smith reports on the specimen sent to him that it is attacked by *Phoma pithya*, but will add fuller details hereafter.

Potatoes diseased with scab, &c.—Dr. Smith also reports on samples received from Mr. Escombe, Penshurst, Tunbridge, in August, 1899. Prolonged cultivation of the fungi showed several species, that it was difficult to detect, which was the primary cause of the disease. "The skin of the Potatoes bore two distinct forms of disease. (1) scab, the cause of which is not yet known; (2) dark brown bodies adhering to the skin, called *Rhizoctonia solani*, being a mycelium of some unknown fungus. Other fungi present appeared to be Potato dry rot (*Fusarium solani*) and the Potato mildew (*Phytophthora infestans*)." Dr. Smith proposes to continue the culture, and to add a further report hereafter. Mr. Hudson observed that scab frequently appears on Potatoes when pig manure has been added to the ground. Such would appear favourable to the fungus which causes it.

Horticultural Shows.

Manchester, April 10th and 11th.

FEW people can realise the great progress which is being made by the Manchester and North of England Orchid Society. It was a happy idea to hold the meeting in connection with the Royal Manchester Botanical Society. In none of the classes was money awarded, but gold and silver medals of the Botanical Society and silver medals of the Orchid Society were granted to noteworthy flowers.

Messrs. Dicksons, Ltd., Chester, staged a fine assortment of miscellaneous foliage and flowering plants, receiving an award of merit. Mr. A. J. Keeling exhibited a choice collection, being honoured with a vote of thanks and certificates for *Cypripedium selligerum majus* Drewett's variety and *Laelia Jougheana* Keelingiae. Messrs. F. Sander

and Co., St. Albans, had a handsome stand. *Odontoglossum elegans* St. Albans var. received a first-class certificate; the silver medal accompanied this. Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, sent a wonderful collection of *Odontoglossums*. The background was composed of splendid plants of *Oncidium sarcodes*. A silver-gilt medal was awarded by the North of England Orchid Society for *Odontoglossum crispum* The Earl, and first-class certificates for *O. excellens luteum*, *O. crispum* Victoria Regina, and *O. Andersonianum album maculosum*. Not only was the gold medal of the society awarded, but the Orchid Society awarded their silver medal. A gold medal, also the Orchid Society's silver medal, were accorded to Jno. Leeman, Esq., West Bank House, Heaton Mersey. The silver medal was unanimously awarded for *Dendrobium Venus*. Awards of merit were also granted for many beautiful and rare types.

† Messrs. R. P. Ker & Sons of Aigburth had a collection of *Amaryllis* and received the gold medal. Mr. John Robson's silver medal for a collection of Orchids was well deserved. Mr. James Cypher of Cheltenham was in fine form. Not only was the exhibit extensive, but every plant was of notable quality. Awards of merit were unanimously granted for *Sophranitis grandiflora giganteum* and *Dendrobium rubens magnifica*. Messrs. Charlesworth & Co. were remarkably good, especially noticeable being *Odontoglossum crispum* Duke of Connaught. An award of merit was adjudged for *Cattleya Schröderæ* Prince Patrick. The gold medal of the Society was deservedly awarded, and a silver one by the Orchid Society. A charming exhibit, brought from Worsley Hall by Mr. Upjohn, gardener to the Earl of Ellesmere, was much admired. A bank of seedling *Clivias*, handsomely grown, came from O. H. Wrigley, Esq., winning the silver medal in a most decisive manner. — Duckworth, Esq., had a splendid collection of cut Orchids. Charming, too, was the somewhat extensive collection of spring flowers sent by Joseph Broome, Esq., Llandudno. The Edwardian ware, much of which contained cut flowers and plants, formed a very pleasing feature at the entrance of the show.

Dublin, April 11th.

ROYAL visitors, wretched weather, and a fine display of flowers that bloom in the spring characterised this exhibition of the Royal Horticultural Society of Ireland. Mr. Hillyard, the courteous secretary, supported by a strong executive, augmented for this special occasion, planned all admirably, save the weather; and one could not but feel thankful that in spite of the flag-fever now raging in Dublin which, with the exception of some tastefully disposed trophies, they had contented themselves with gracefully entwining the bulky pillars in the entrance hall of the Royal University with a soft drapery of red, white, and blue. Severely simple as the decoration was, it was highly effective; and, moreover, the exhibits being practically confined to the spacious rooms on each side of the hall, ample space was afforded for suitably receiving the distinguished visitors, the Duke and Duchess of Connaught, the Princess Christian, and the Viceregal party, who honoured the show by a visit.

A fine floral circular shield, furnished by the Messrs. Henderson of Oakley Park Nurseries, which faced the visitors on entering, could not pass unnoticed, but space precludes more than a brief sketch of what was an excellent show. In the room on the right the Daffodil, in rare beauty and apparently endless variety, reigned supreme. Most conspicuous was a superb stand of ninety varieties, over which Miss Fanny Curry lingered with many a loving touch, and kindly pointed out the pet of her collection, Lismore, a chastely beautiful green tinted trumpet of her own raising. Here, too, with trumpets blowing all around it, was the Barian cup won by Miss Curry at the Drill Hall, London, on the previous day. Each variety in this stand was represented by about a score of fine blooms. In the same room the masses of yellow were relieved by 240 Rose blooms, staged by Messrs. A. Dickson and Sons of Newtownards, among which twenty-four faultless flowers of Catherine Mermet were very noticeable. Four boxes of these Roses were eventually commandeered by his Excellency the Lord Lieutenant for the delectation of our Queen, who from obvious reasons was unable to gratify loyal hearts and true by her presence at the show.

The special prize presented by Messrs. Hogg & Robertson, who put up a representative stand of blooms from their bulb farm at Rush, for a collection of *Narcissus*, was awarded to Lord Cloncurry, who also took the Drummond prize for a stand of twenty-four bunches in twelve varieties, and the society's prize for a stand of double *Narcissus*. In the popular class for twelve bunches, distinct varieties, competition was very keen. C. S. Spear, Esq., taking premier honours, being closely followed by Mr. Carroll of Dornden, whose superb blooms of *maximus* were very telling. To Dornden, too, went first honours for six pots of Tulips, exhibits of spring Cabbage, Broccoli, Lettuce, and a tray of six kinds of vegetables, the latter winning the bronze medal offered by Messrs. Tongood of Southampton. The same firm's silver medal for ten kinds of vegetables going to Lord Ashtown for a tray of high merit. Hyacinths were in good form, George Drimmie, Esq., Lord Ashtown, and Miss Martin leading in different classes, the best Tulips being staged by Lord Cloncurry; Edmund D'Olier, Esq., leading in class thirty-five for Roses. Strawberries were remarkable for size and colour, Lady Caledon, Lady Bury, and the Hon. C. F. Crichton setting up fine dishes of Royal Sovereign, and taking prizes in order named.

In the large concert room devoted to plants Mrs. Goodbody's table of *Amaryllis* formed a dazzling bit of colour. Nine good pot

Roses, staged by Mr. Crawford, well merited the challenge cup. Huge pots of Arum Lillies were splendidly shown by Mr. Coghlan, gardener to the Rt. Hon. I. M. Meade, and *Deutzias*, *Spiræas*, and other spring flowers were largely in evidence, although *Azaleas*, except some bright specimens of *mollis* from John Miller, Esq., staged in quantity were poorly flowered. Messrs. Drummond, Ltd., and Messrs. Henderson & Sons contributed to the general embellishment of the Royal University with plant groups; the Glasnevin selection of exotics proving, as it always does, very attractive; F. W. Moore, Esq., ably assisting, as usual, the Royal Horticultural Society of Ireland, which, unfortunately, does not receive that support from the general public it so well deserves. Perhaps the society is a little too conservative; perhaps not. However that may be, all connected with this spring show was admirably carried out, even to a substantial luncheon for the judges, for which thanks are returned by—ONE OF THEM.



Fruit Forcing.

Vines.—*Early Forced House.*—Red spider is the great enemy of Vines subjected to forcing, and is best kept in check by a timely sponging of the leaves. Syringing, even between the bunches, with the clearest water, militates against the appearance of the Grapes, and employing sulphur on the hot-water pipes is sometimes attended with serious discolouration in white Grapes. Inside borders, if needing a supply of water, should be attended to early in the day, so that surplus moisture may pass off before closing time. A light mulching of dry material will prevent moisture rising prejudicial to the Grapes, and may mitigate the tendency to cracking in certain varieties. Early Grapes do not always colour well, the defect chiefly arising from over-cropping, or continued hard forcing with attacks of red spider; it is only avoided by moderate cropping, rational treatment, and cleanly culture. A constant supply of rather dry, warm air, and a low night temperature will do much to assist heavily cropped Vines in colouring the Grapes.

Succession Houses.—The stopping and tying of the shoots must have attention. Where the space is restricted stop the shoots two joints beyond the fruit, and as foliage is necessary to sustain root activity as well as elaborate the juices, leave the laterals on the shoot both above and below the bunch, or at least those from the two lowermost eyes, and those level with and above the bunch. Pinch these at the first joint, especially those from the basal leaves, also those above, unless there is space for extending the laterals, when they may be allowed to make two or three leaves, but no more growth must be encouraged than can have full exposure to air and light. After the space is fairly furnished keep the growths closely pinched to one joint as made. The great evil in Grape growing is overcrowding, which deprives the foliage of light and air; and restricting the growth is intended to avoid that, and secure thoroughly solidified wood as it is made.

Tying Down.—It is a good plan to have the rods somewhat lower than the trellis, so that the side shoots have a slight incline upwards. In tying these in their places where they are to remain during the summer it is a common practice to begin to tie them down as soon as they are long enough to bend. This is not advisable unless as a precaution against injury from frost, as the shoots at this stage are so tender that the slightest twist the wrong way breaks them. It is a good method to defer tying down until the shoots are less sappy, which may be when the bunches are showing clear of the leaves. Sufficient space should be left in the ligatures for the swelling of the shoots. Stopping ought to commence when the leaf at the joint or place of pinching is the size of a halfpenny.

Vines in Flower.—Afford Muscats a free circulation of rather dry air and a temperature of 80° to 85° or 90° by day from sun heat, 70° to 75° artificially, and 70° at night, falling 5° on cold nights. Raise the points of the bunches to the light, and liberate the pollen at midday by gently rapping the footstalks of the bunches, or go over the bunches carefully with a large-sized camel's-hair brush, and afterwards dust them with another charged with Alicante pollen, or that of some different and free setting variety. Hamburgs set freely in a lower temperature, but they are better for a little assistance from fire heat, and other varieties are similarly aided during the flowering period.

Thinning Bunches and Berries.—It is advisable to make a selection of the best bunches, and leave only those required for the crop before they come into flower. This concentrates the forces on those retained, and by proper attention to fertilising the flowers a good set and finer bunches and berries are secured. Thinning the berries should commence as soon as they are set, especially in the case of the free-setting varieties, and where fine specimens are required for exhibition it should

be attended to while they are in flower. This concentrates the forces on those retained, and by proper attention they swell to a large size. With the shy setters thinning should be deferred until the properly fertilised berries can be distinguished by their taking the lead in swelling. Follow it up on dull days, or early and late in bright weather. Remove surplus bunches, under rather than overcropping the Vines, as too heavy cropping is fatal to colour and finish.

Feeding.—When the Vines are in full leaf, and the Grapes swelling, they require abundant supplies of nourishment. This may be given in liquid form, but it is not by any means the safest method, as an overdose sometimes destroys the young fibrous roots. Shankling also often follows filling the soil with organic matter held in suspension. All the advertised fertilisers are excellent and handy. It is best to give the borders a thorough supply of water, then supply the fertiliser, and water in moderately. By this procedure there is no fear of losing any virtue the fertiliser contains; but when it is given on a dry border, and followed by a heavy watering, it is likely to be worked into the drainage, and roots be encouraged at the bottom of the border instead of near the surface. A light mulching of short manure will be of advantage in keeping the border uniformly moist.

Late Houses.—The Vines are making rapid progress. Disbud and tie out the growths as they require it. Close the house early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping the houses and syringing the Vines at closing time, but not after the bunches show. Late Hamburgs are starting naturally, and need only a little fire heat to exclude frosts.

Young Vines.—It will be necessary to afford a gentle fire heat in cold weather to keep the Vines in steady progress, otherwise they are best allowed to start naturally, and secure a short-jointed growth by free ventilation. Disbud, leaving the best shoots on both sides of the canes and alternately at about 18 inches distance apart. The canes will have been depressed so as to cause them to break regularly down to the basal buds, when they can be tied in position. Crop lightly, one or two bunches being the maximum on permanent Vines. Any super-numeraries planted to fruit early, and afterwards be cut out, may carry a bunch on each shoot; six to eight bunches, however, are as many as vigorous Vines can bring to perfection, and fewer should be left on weakly canes.

The Kitchen Garden.

Dwarf French Beans.—The later sowings of these under glass succeed better in boxes than pots, not suffering so much from dryness at the roots. As heated pits are cleared of early Potatoes or other crops, they may well be planted with Dwarf Beans. Raise stock in 4-inch pots, and plant out of these in rows 15 inches or rather more apart. While the cold weather lasts, and till such times as the plants are well established in pits or frames, keep them somewhat close and warm, ventilating more freely when the cropping stage is reached.

Broccoli.—If midseason and late Broccolis are sown in quantity much before the end of April, the plants are liable to remain in the seed beds longer than is good for them. Sown now thinly in drills 5 inches apart, abundance of sturdy plants should be available by the time the ground is ready for their reception. Plants raised under glass, or thickly in a sheltered position, ought to be pricked out in nursery beds, disposing them 4 inches asunder each way. From these they should be eventually transplanted with the aid of a trowel—not drawn and replanted with a dibbler.

Cauliflowers.—For a very late crop sow seed of Autumn Giant as advised in the case of Broccoli. Plants of early and main crop varieties that were either raised last autumn or early this year in heat ought to be large enough and sufficiently hardened to plant out finally. Some of the earliest may well be planted at the foot of a south wall, and the rest either on a warm border or in hand-lights. All should be planted firmly in rich ground.

Lettuces.—Plants raised early and pricked into frames must not be kept in a crowded state. After hardening transplant to the open, moving each plant with a little ball of soil about the roots, and replant in rich ground. The Cabbage varieties may be arranged 8 inches apart in rows 10 inches apart, and the Cos varieties 2 inches more apart each way. Sow seeds if possible in drills where the bulk of the plants are to develop to their full size.

Onions.—Plants raised in pans and boxes have made poor progress, but, small as they are, all ought to be planted out before dry, hot weather sets in. Those that are somewhat drawn will recover most quickly from the check of transplanting if the tops are shortened somewhat. Plant in freely manured, well prepared ground, 6 inches apart, in rows 12 inches asunder. This work should be done carefully, burying the roots one-half inch below the surface, spreading them out evenly, and fixing firmly. Autumn sown Onions may also be transplanted, that is if this is not already done, treating them similarly to those raised under glass.

Tomatoes.—Plants that are being prepared for the open ought not to be left in the seed pans long enough to become drawn and weakened, nor should any early raised be kept in small pots from now to the end of May. The former may be placed singly in 4-inch pots, sinking them to the seed leaves. Return to moderately warm quarters till well rooted, when they may be moved into frames. Before earlier raised plants become badly root-bound, shift them into 5 inch or 6-inch pots, and treat as advised in the case of the later raised plants.

THE BEE-KEEPER.

Seasonable Notes.

ALTHOUGH the climatic conditions have been more favourable during the past fortnight, it has not been ideal bee weather, the wind remaining in a cold quarter. The few bright days experienced have made a great improvement in the condition of the stocks. The wind being in the south for forty-eight hours caused the temperature to rise. The bees took long flights, which have proved most beneficial to them. Bee-keepers have thus been able to form a pretty correct opinion as to the number of bees in the various colonies without disturbing the combs. Some of our stocks are strong, but others are indifferent. Owing to the late spring they are not as strong as usual at this season. We do not, however, think this will seriously affect them, as all vegetation is very backward, and the honey flow will probably be a fortnight later than usual.

Bee-keepers who have several colonies in straw skeps should study their requirements, and not allow them to become short of stores; the bees may be fed with thin syrup. If a piece of perforated zinc is placed over the hole on the top of the skep, a bottle feeder may be used, which will prevent an escape of heat from the brood nest. If there are no other bees kept in the immediate neighbourhood, open air feeding may be practised. A great quantity of syrup is not required at this season. The plan we adopt is to place a little in the feeders daily when the sun is shining, and it will then be carried into the hives. The disadvantage of open air feeding is the strongest stocks take the bulk, whereas in many instances it is the weak colonies which require the more food.

The past winter has proved the fact that straw skeps are to be recommended for wintering purposes. We invariably keep several stocks in skeps for early swarms. They are, however, useless to the modern bee-keeper unless the swarms are obtained as early as possible. The system we adopt most successfully is to place the swarms in frame hives, using full sheets of comb foundation; or, if we have them to spare, combs that were used the previous season for extracting. If this is done, it is surprising how rapidly the bees increase.

After Treatment of Swarms.

If a strong swarm is obtained before the end of May and treated as suggested, a hive containing ten frames will be filled with brood in less than three weeks, and if the weather is favourable during that time they will require little attention; but should it be dull and showery, which is often the case at that season, feeding must be resorted to. Only enough syrup should be given for daily consumption, as if the cells are clogged with syrup the queen will be unable to fill them with brood, which will cause a serious loss of workers when the honey flow comes. Natural swarms always work much more freely when treated in this manner, than if left to take their chance in an ordinary hive.

If several swarms are obtained and treated as above they may be worked on the same lines as the bees wintered in frame hives. If honey in sections is required a crate containing twenty-one sections may be placed in the hive as soon as it is crowded with bees. If extracted honey is preferred the stocks can be treated in the same manner as recommended in doubling hives. Shallow frames may be used. These are excellent for obtaining a good sample of honey, and the bees take readily to them. Combs that were used the previous year are to be preferred to comb foundation, as new ones are liable to break down whilst the honey is being extracted from them.

If full-sized combs are used it will be an advantage to take some combs from another stock to strengthen the one intended for honey production. These combs should be placed in the middle of the surplus chamber, and the empty combs on each side, as the greater the number of bees in a hive so will the honey be in proportion.

—AN ENGLISH BEE-KEEPER.

Gardeners' Charitable and Provident Institutions

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Planting Flower Beds (Gardener).—We thought it preferable, in view of the nearness of the bedding season, to give an illustration of your beds, together with explanatory notes, in the form of an article. If, therefore, you will turn to page 336, fig. 94, you will find an answer which will, we trust, be of assistance to you.

Seeds from Egyptian Mummy (H. M.).—The seeds are probably those of the so-called Egyptian Mummy Pea, as the three seeds are about the size of a Pea. We should sow them singly in 3-inch pots and place in a gentle heat, as that of a Cucumber frame or hotbed, and when up, if they germinate, keep near the glass, removing to a greenhouse when about an inch high, hardening and planting outdoors when the weather becomes mild. Perhaps, if you were to send the seeds to Kew they would be able to identify them for you. Some we have seen were simply grey Peas, and certainly had no connection with the mummy from the case of which they were taken.

Tips and Edges of Arum Leaves Turning Brown (Idem).—The usual cause is moisture deposited on them and hanging on the parts so as to destroy the tissues. This may result from syringing, or from keeping the house too close and moist, the atmosphere becoming what is known as stagnant. The preventive is to admit a little air and maintain a temperature of about 50°. Thus, with the air in motion, the water or air moisture is deposited on the glass or evaporates and passes off with the heated air, and the foliage, also spathes, develop properly.

Exterminating Rabbits and Rats (Conejo).—The best "cure" for the rats is poison, baiting the haunts for several days, and then use the vermin killer according to instructions. Smearing the holes with gas tar tends to drive the rats away. Another excellent mode of exterminating rats and rabbits is to pour some bisulphide of carbon into the holes and stop them up, but this is very inflammable, and requires the greatest care. Gas tar is distasteful to rabbits, and is best used on twigs or parts of branches placed at the entrance to the holes, so as to allow the rabbits free egress and ingress, yet so that their bodies brush against the gas tar. We have also used wire netting on the boundary, this being necessary where rabbits abound in the locality, having it let into the ground 6 inches and extending on the outside at a right angle a similar extent.

Vines Weak and Showing Small Bunches (H. S.).—Probably the Vines have been heavily cropped, and are showing the effects. This we suspect is the case, as "they showed good bunches last year," and although well manured with cow manure and lime every year the nutriment has probably been inadequate. We should give the Vines a dressing of the following mixture:—Bone superphosphate, dry and crumbling, three parts; sulphate of potash, two parts; and sulphate of magnesia, one part, mixed, applying 4 ozs. per square yard, and pointing into the border very lightly. It may be repeated when the Grapes have been thinned and are swelling freely. The extension system is the best for rather old Vines, or perhaps the semi-extension method, as they give finer bunches, the pruning not being so close as by the spur mode. The bringing up of young rods is an excellent plan, and mostly gives satisfactory crops. One Vine would be better than five, as there will be extension, and consequently more foliage relative to the crops.

Fruit-bearing Phoenix (J. C. S.).—Of the species comprised in the genus Phoenix, only three possess edible value. The Date Palm, *P. dactylifera*, produces the well-known dates; and the Wild Date, *P. sylvestris*, yields juice from which sugar is obtained, but it does not produce edible fruit. The Chitta-eita Palm, *P. farinifera*, affords from its trunk a farinaceous substance, used in times of scarcity, but regarded as much inferior to and less nutritious than common Sage. Of the other species *P. rupicola* is the handsomest, and next perhaps is *P. tenuis*, which in general appearance resembles *P. dactylifera*, but is slenderer and finer in all its parts.

Dip for Tomato Plants Infested with White Fly (F. S.).—We do not consider it would be feasible to kill any eggs there may be on the plants without injuring the foliage. The eggs are much more tenacious of life than the perfect insects, and the foliage of Tomatoes, from its hairy nature, is susceptible of injury. The insects are easiest destroyed by heating the hot-water pipes to 170° or more, and then painting them with a cream formed of flowers of sulphur and skim milk, keeping the pipes hot for about an hour, then allowing to fall to ordinary warmth, the house being closed. It is necessary to repeat this at intervals, so as to thoroughly destroy the pests as they emerge from the eggs.

Nycteria selaginoides (J. Row).—This plant is an annual that has been more or less largely grown in England for a number of years, and to some people the rose and white small flowers (fig. 95) have a never failing charm. It is very dwarf, and on this account is peculiarly useful for edging beds. The flowers at first glance resemble those of some of the *Silenes* and *Saponarias*, and like those of the plants named are profusely borne. *N. selaginoides* succeeds in any soil that is not heavy and wet, and must be treated in precisely the same manner as other hardy annuals. As you have several small beds that you fill with



FIG. 95.—NYCTERIA SELAGINOIDES.

annuals we should utilise the *Nycteria* for edging one or two of them, and if the seeds are good and the plants receive proper attention, we think you will be delighted with the result. Bear in mind, however, that, like other plants, it does not like to be crowded in dense masses.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (C. J. H.).—1, *Celsia arcturus*;

2, *Oxalis rosea*; 3, *Grevillea robusta*; 4, *Moraea sisyrinchium*. (M. F.).—1, *Dendrobium nobile*; 2, *Lycaste Skinneri*; 3, *Dendrobium Farmeri*; 4, *D. primulinum*; 5, *Cœlogyne ocellata*. (S. R. S.).—1, *Cyathea Smithi*; 2, *Dicksonia antarctica*; 3, *Asplenium bulbiferum*; 4, *Adiantum graeillimum*; 5, *A. cuneatum*. (A. G. L.).—Nareissi are florists' flowers that can only be named by comparison; send specimens to Messrs. Barr & Sons, Long Ditton, with stamped envelope for a reply, and we have no doubt they will assist you.

Trade Catalogues Received.

W. Clibran & Son, Altrincham.—*Manual and Reference Guide*.
H. P. Kelsey, Boston, Mass.—*Ginseng Culture*.
J. Stredwick, St. Leonard's-on-Sea.—*Dahlias*.

Covent Garden Market.—April 18th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case ...	4 0	to 15 0
" Californian, per case	8 0	14 0	Oranges, per case ...	5 0	15 0
" Nova Scotian, barrel	15 0	22 0	" Californian, seedless	16 0	24 0
" Tasmanian ...	8 0	18 0	Pears, Californian, case...	6 0	12 0
Cobnuts per 100 lb....	80 0	90 0	Pines, St. Michael's, each	1 0	6 0
Grapes, black ...	5 0	10 0	Strawberries, lb. ...	6 0	10 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Mustard and Cress, punnet	0 2	to 0 0
Asparagus, green, bundle	5 0	5 9	Onions, bag, about 1 cwt.	7 0	9 0
" giant, bundle	15 0	20 0	" Egyptian, cwt. ...	8 0	0 0
Beans, Broad, per flat ...	3 0	4 0	" Spanish, case ...	10 0	12 0
" Jersey, per lb. ...	1 0	1 3	Parsley, doz. bunches ...	2 0	4 0
" Madeira, basket ...	2 6	3 6	Peas, Jersey, lb. ...	1 9	2 0
Beet, Red, doz. ...	0 6	0 0	" French, lb. ...	0 7	0 0
Cabbages, per tally ...	9 0	12 0	Potatoes, cwt. ...	3 6	6 0
Carrots, per doz. ...	3 0	4 0	" new Jersey, lb. ...	0 2	0 5
" new ...	0 10	1 3	" Teneriffe, cwt....	18 0	28 0
Cauliflowers, doz. ...	3 0	4 0	Radishes, Jersey, long, doz.	0 8	0 10
Celery, per bundle ...	1 0	1 9	" French, round, doz.	0 9	0 0
Cucumbers, doz. ...	2 0	4 0	Seakale, doz. baskets ...	18 0	21 0
Endive, doz. ...	1 6	2 0	Shallots, lb. ...	0 3	0 0
Herbs, bunch ...	0 2	0 0	Spinach, per bushel...	3 0	5 0
Leeks, bunch ...	0 8	0 0	Sprue, French, per doz. ...	9 0	10 0
Lettuce, doz. ...	0 10	1 2	Tomatoes, per doz. lbs. ...	4 6	5 6
Mint, green, doz. bunches	3 0	6 0	Turnips, bunch... ...	3 0	4 6
Mushrooms, lb....	0 8	0 10	" new ...	0 10	1 3

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mignonette, doz. bunches	3 0	to 5 0
Arums ...	4 0	6 0	Narcissus, white, doz. bun.	3 6	4 0
Asparagus, Fern, bunch...	2 0	2 6	" Yellow, doz. bunches	2 0	3 0
Bouvardia, bunch ...	0 6	0 9	Odontoglossums ...	5 0	7 6
Carnations, 12 blooms ...	1 9	3 0	Pelargoniums, doz. bnchs	8 0	12 0
Cattleyas, per doz. ...	10 0	12 0	Roses (indoor), doz....	6 0	8 0
Daffodils, double, doz. bnch	3 0	5 0	" Red, doz. ...	3 0	5 0
" single, doz. bnch.	6 0	8 0	" Safrano, doz ...	2 6	3 6
Eucharis, doz. ...	6 0	8 0	" Tea, white, doz. ...	3 6	6 0
Gardenias, doz. ...	3 0	4 0	" Yellow, doz. (Perles)	5 0	7 6
Geranium, scarlet, doz.			" Maréchal Niel, doz.	6 0	12 0
bnchs. ...	6 0	9 0	" English (indoor):—		
Lilium Harrisii, 12 blooms	6 0	8 0	" La France, doz. ...	4 0	8 0
" lancifolium album ...	3 6	4 6	" Mermets, doz ...	3 0	8 0
" rubrum ...	3 6	4 6	Smilax, bunch ...	4 0	6 0
" longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch	0 6	0 8
Lilac, white, bundle ...	4 0	6 0	" yellow, bunch	1 0	1 6
" mauve, bundle ...	6 0	8 0	" bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	" dark, French, doz.	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	" " English, doz.	2 0	3 0
" Yellow, doz. bnchs.	3 0	4 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ficus elastica, each ...	1 6	to 7 6
Arbor Vitæ, var., doz. ...	6 0	36 0	Foliage plants, var., each	1 0	5 0
Arums, per doz. ...	6 0	8 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, doz. ...	18 0	36 0	Geraniums, scarlet, doz....	6 0	10 0
Aspidistra, specimen ...	15 0	20 0	" pink, doz. ...	8 0	10 0
Azaleas, various, each ...	2 6	5 0	Hyacinths, Dutch, doz....	10 0	18 0
Boronias, doz. ...	20 0	24 0	Hydrangeas, white, each	2 6	5 0
Orotons, doz. ...	18 0	30 0	" pink, doz. ...	12 0	15 0
Cyclamen, doz. ...	6 0	8 0	Lily of Valley, per pot ...	1 0	2 0
Daffodils, pot ...	0 6	1 0	Lycopodiums, doz. ...	3 0	6 0
Dracæna, var., doz....	12 0	30 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	8 0	12 0
Erica various, doz. ...	8 0	18 0	Myrtles, doz. ...	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	" specimens ...	21 0	63 0
Ferns, var., doz. ...	4 0	18 0	Spilæas, per doz. ...	8 0	12 0
Ferns, small, 100 ...	4 0	8 0			



Dutch Farming.

IN May, 1899, a trip to Holland was organised by a number of Essex farmers, or rather, to speak more correctly, two trips, for the forty-six farmers were divided into two parties, and left England at an interval of a fortnight, though each party carried through the same programme. The report of the visit is before us, and we think some of its conclusions are worthy of note.

The places visited included various markets and farms, agricultural schools, an agricultural analysis station, a condensed milk factory, a co-operative cheese factory; coop, dairy, bulb, fruit and vegetable farms; and shrub nurseries.

The Dutch grow the ordinary English farm crops, but in addition there is a very large acreage of Rye grown for seed, Caraway, and Sugar Beet. The Rye probably finds its markets eastward in Germany and Russia, Dutch seed having been found profitable to sow, just as English farmers purchase warp-grown seed for the same reason. Caraway is used chiefly for kummel distillation, and is a very profitable crop; but there would be a very small demand for it in this country. Sugar Beet is said to be the sheet anchor of Dutch arable farming, realising as much as £60 per acre, but the value is artificially raised by the bounty put upon the export of sugar. This increases the price so much as to make sugar an article too costly for consumption by the Dutch working classes. If we consider the low price which the English workman pays for sugar, jam, and sweets for the children, we must conclude that the profit arising from this bounty system does not all return to the credit of the Dutch nation. The Dutch farmer not only gets the value of the sugar, but has the pulp for use amongst his cattle. It may fill a gap, but it must be poor stuff with all the juice extracted.

Dairying—the production of butter and cheese—appears to be the chief industry. One of the English visitors, Mr. E. C. Pritchard, says, "The English arable farmer will not find much to copy in Holland. Their methods of cleaning land and making ensilage are far from satisfactory, and their harvest operations would be too expensive, going back to the days of our great grandfathers; but when we come to the question of dairy farming the scene changes, and in dairying our Dutch friends are far and away ahead of us." In the parts of Holland visited all the cattle were of the pure Dutch breed. The Dutch cow is not a good beef animal, but as a milk producer is almost unrivalled. For instance, at the Waddinsveen dairy farm during the last six years the average annual production of milk per cow was 880 gallons, which is much higher than that of most English cows. The best cow gave 1179 gallons in 1897, and 1217 gallons in 1898.

Practically no heifer calves are fatted and killed in Holland; all are reared and tested as milkers, and only non-breeders and the few which fail as milkers are fed off in early life. In cleanliness Dutch farms, and especially the cowhouses, compare very favourably with their average British rivals. Listen to the report: "The cows are kept in a condition of scrupulous cleanliness, and to such an extent is the cleanliness of the cowhouses carried out in North Holland, where they form a portion of the farmhouses, that in the summer it is possible to use them as sitting-rooms." Again, "In view of the health and cleanliness of the Dutch herds, and of their great milk-producing value, the restrictions on the importation of Dutch, in common with all other live cattle, into this country appear entirely unnecessary."

This sounds all right, but it is difficult to draw a line between.

one country and another when they are in juxtaposition, and we know that some parts of Europe are very prone to, and in fact hotbeds of, cattle disease. In order to improve the breed of cattle the Dutch Government offers premiums for the best bull in each district, a condition of the award being that the animal shall thereafter be available at the request of any person living in the district, the customary charge for service being 1s. 8d. "In North Holland the bull travels from village to village." Private enterprise has been sufficient here hitherto to keep up and improve the breeds of cattle, and premium bulls will hardly be needed until the country is cut up into small holdings.

At the same time it is interesting to note the close interest the Dutch Government takes in the welfare of the rural communities and how it assists them in a way unknown in England. A peculiarity of the country is the nature of the farm buildings. "In North Holland the dwelling house, cow house, and cart or implement shed are all under one roof, the centre of the building where the high peaked roof gives the greatest height, being used for the storage of hay."

But how about sanitation? One of the party, Mr. T. S. Bell, says, "Here in this land of cleanliness are a farmer and his family living in one room under the same roof as twenty or thirty cows, and the only door of that room actually opening into the cowhouse. What would our district councillors and their sanitary inspector say to them?" The answer to this query lies in that one word cleanliness. How far removed from cleanliness is the average English cowhouse?

The Essex farmers found Holland a paradise in one respect; there is a plentiful supply of country labour; wages are 30 to 40 per cent. less than they are in Essex, and this cheaper labour must have much to do in enabling the Dutch farmer to pay his way. For one thing, it is no encouragement to parsimony in the matter of the labour bill, and this is seen to work out in practice, for "on the mixed farms visited it was found that the labour bill reached the high figure of £2 10s. per acre per annum, and it is thus evident that though individual wages may be low, the total amount paid for labour is high." Says Mr. B. F. May, "We often saw twenty labourers in one field, and I went into a field where thirty-four men, women, and children were on their knees hoeing Oats with short-handled spuds"

The whole party seem to have been much impressed by one noticeable fact; they saw no bad crops and no waste land. Mr. Pritchard says, "I do not think the whole of Holland contains 1 rood of derelict land." Even the hedgerows were hoed on some farms, and the grass by the sides of the fields was cut to the water's edge and made into ensilage.

Holland being so largely agricultural, the money spent by government in sugar bounties, premiums for stud animals, support of agricultural schools and analysis stations, and the construction of light railways, has to be provided to a large extent by the agricultural community, therefore taxation is as high there as it is here. The total taxation amounts to 10 per cent. of the income of the people, but farmers are not charged income tax, or tax upon capital such as other Dutch business men have to pay.

The English visitors were much impressed by the thrift of the people, and came to the conclusion that it was the chief factor in Dutch agricultural prosperity. By thrift is denoted the lower scale of living, and also the small amount of money spent in dress. To quote the words of one of the party, "A great deal of the prosperity of the Dutch may be accounted for by the old saying, 'He is not the richest who has the most money, but he who has the fewest wants in proportion to his means.'"

Work on the Home Farm.

The weather is still very cold, though there has been a fair amount of sunshine. Farm work has made good progress, in fact it has been the best week since Christmas. If hands were only more plentiful the arrears could soon be worked up.

A friend informs us that in his village the men lately struck work for a rise from 2s. 9d. to 3s. per day; the masters put up with incon-

venience, and stood firm, and after a few days the men returned to work, except a few wastrels, whose services were no longer required.

Barley is all drilled, and the latest has gone in dusty and well, but the land is cold for the time of year, and we do not expect a quick growth. The early sown has been a long time in the ground, and now it is up makes very slow progress, as if it were in doubt as to the season of the year.

Mangold must be sown at once. The wisdom of growing a fair acreage of this crop has never been so well demonstrated as in the past season. On strong soils Mangold is sometimes drilled on the flat, the land having been prepared previously, and the manure ploughed in during the winter; but we and most others prefer ridging. There is as good a chance of getting a plant if care is exercised, and we think we get heavier roots. The land should have been clean in early spring, and ploughed and rolled down in February. It will now be in a moist, fresh condition, and should ridge up well. The whole operation of sowing must be done quickly to avoid loss of moisture. The land must be ridged 28 inches wide, the manure be spread and shaken, the hand manure sown, the ridges split, and the seed drilled on the same day. The ridges must afterwards be lightly rolled down. Manure for Mangold should be short spit manure that has been turned, and is partly decomposed, having no straw amongst it. As manure on ordinary farm soil we should use 1½ cwt. sulphate of ammonia, 3 cwt. superphosphate, and 3 cwt. common salt, with a further dressing of sulphate after the plants are singled. Sow 6 lbs. per acre of good new seed. The seed should be put in water forty-eight hours before being required, remain in steep twenty-four hours, and then be spread out on a sheet in the granary to get the surface of the seed sufficiently dry for drilling. If not dry enough a little fine ash mixed with it will make the drilling go all right.

Ewes and lambs are very unsatisfactory; the ewes are poor, and are giving little milk owing to poor pasturage. All the lambs are below average in strength, and many weakly ones are dropping off. This will seriously reduce an already scanty crop.

THE PASSING OF THE AGRICULTURAL LABOURER.—Agriculturists in Lincolnshire—especially in the southern parts of the county—are suffering serious inconvenience owing to the difficulty in obtaining farm hands. In a measure this is due to the migration of the labourers to the towns, where they can command higher wages than in the rural districts, while the war is responsible for a further depletion. The difficulty in obtaining men has never, says the "Morning Post," been so great as that experienced during the present spring. In one village seven labourers' cottages were vacated at Lady Day, and all attempts to secure men in the place of those who have left have been unsuccessful. Agricultural work, consequently, is very backward.

PRACTICAL SHEEP HUSBANDRY.—Once a week fresh bright Oat straw will make a very acceptable change from the most nutritious of other kinds of food. Be sure to supply ample water to the flock. Let it be fresh drawn from a well, and see that the drinking troughs are not surrounded by ice. As the ewe is so will the lamb be. It is not enough to get the best ram possible and then neglect the ewe. Sheep love change; they fret when confined to one pasture or one kind of food. Do not stint the fodder or the grain. If there is any good reason for buying wool on the sheep's back for 18 and 20 cents a pound, is there any good reason why the grower himself should not hold it till shearing time? As there are many kinds of people so there are many kinds of sheep. We must not expect every ewe in the flock to bring as good and strong lambs—there are always weaklings and degenerate lambs in a flock—and it may be wise, says an American contemporary, to let these go, as weeds, to the waste pile before they have cost more than they will ever come to.

AUSTRALASIAN NOTES.—The increased value of wool has, from information from Australian sources, been most advantageous to the sheep owners in those colonies. At Wellington, New Zealand, in December last the special feature was the keen competition for the Kent, or Romney, wool, which is produced in large quantities in that district, one clip making as high as 11½d. in Wellington, New Zealand, with strange contrast to the value of this wool at home, whilst at the same market the Lincoln wool was also being strongly competed for, with a tendency of hardening prices. From Hamilton, N.Z., we learn that a further commission has been placed for the purchase of Lincoln rams for Argentina, the commission being restricted to shearing rams. This information shows that the competition between our home breeders and those in New Zealand for the supply of Lincoln rams to the Argentina market is not at an end. Consequently it is a matter that should have the serious consideration of our home breeders, whose interests are threatened by this competition, as to how this can best be met and overcome. Possibly the better plan is for the home breeders to avoid, as far as possible, shipping to the Argentine any other than first-class rams, which, when compared with their competitors from New Zealand, will, by their greater merit, larger size, and typical character, show that the English bred sheep are better than the Australian or New Zealand imports.—("Farmer and Stock-keeper.")

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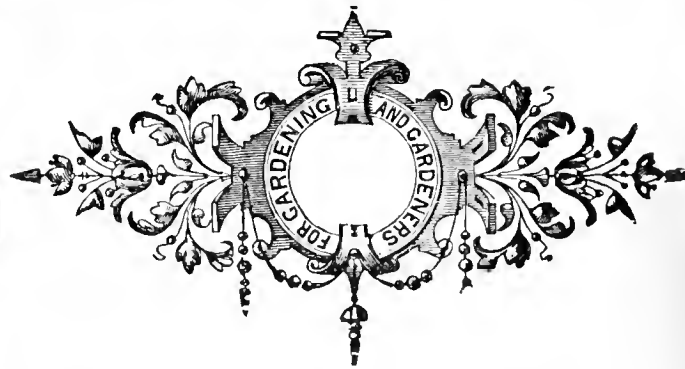
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Journal of Horticulture.

THURSDAY, APRIL 26, 1900.

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from the Office, 12, Mitre Court Chambers, Fleet St.,
London, post free for a Quarter, 3/9. Editorial
communications must be addressed to 12, Mitre
Court Chambers, Fleet Street, London.

A National Rose Day.



It be desirable that any flower
be worn on any particular day of
the year in commemoration of any
notable personage surely the royal
Rose should be that flower, and
the coronation day of Queen Victoria
the day of all others which should be thus
gracefully recognised.

The proposition of a Fellow of the
Royal Horticultural Society (on page 328, last
week) is an admirable one, and the reasons adduced
for carrying it out most cogent. The Rose by
common assent is the emblematical flower of
England, and there is no personage in ancient or
modern times with whose name it could be more
appropriately associated, on the anniversary of a
great historic event, than that of England's good
and venerable Queen Victoria.

Great as may have been the services rendered
to the nation in various ways and at critical times
in our long island's story by distinguished men
in peace and in war, there is no name that will be
more honoured through the coming centuries than
that of the revered monarch of these realms. Nor
will this be so simply because of the exalted
position occupied by her Majesty through a period
of time without a parallel, but because of the
manner of such occupation, and the resulting
advantages in the upbuilding of the greatest nation
of the earth and its ever growing prosperity.

How much our truly noble Queen has con-
tributed to this wonderful and mighty consummation
by untiring devotion to duty, by wise council, rare
experience, ripe judgment, purity of motive, and
grandeur of character—the grandeur of simplicity
that appeals to all—can never be fully described,
but it is not the less accepted because felt by
all classes of the community. There are none so
high who do not rejoice in doing reverence to the
occupant of the throne. None so low and needy
who do not feel they have a real friend there in
deep sympathy with them and with all who suffer
in the vicissitudes of life; and, therefore, all
delight in various ways to do honour to one who

has, during a long life, won their confidence, not more by her greatness in station than by her goodness of heart.

It is surely well to evoke the sentiment of a community and afford means within the reach of all for its symbolic display. Thus we find mutual pleasure incited and displayed by "favours" in celebrating domestic events; we have "colours" denoting loyalty to an "idea" or object as personified by an individual; we have the "flag that's braved a thousand years," of small material value, but as a symbol priceless, and which numbers of heroic men have defended by the cheerful sacrifice of their lives, while others are equally ready to do so. Both in war and in peace emblems have their uses in fostering unity and affording means for a common expression of feeling and admiration for a person or object believed to be good.

As all know, only quite recently the value of a symbol, initiated by the Queen, in promoting fraternal kinship has been remarkably demonstrated. As with the wand of a wizard, the "wearing of the green" has been invested with a significance very different from what it was formerly supposed to bear. From a badge of bigotry, as by some good people interpreted, it was suddenly ennobled as an expression of trust, loyalty, and good feeling between the Sovereign and peoples of the British Isles. That act of grace and tact of the Queen did more in an hour in engendering a spirit of good will among and between her subjects on both sides of the narrow sea than could have been effected by an Act of Parliament hotly debated for a session. The permission to wear the Shamrock of Ireland was intended and understood as an expression of trust in, and honour conferred on, her subjects. Let, then, these in turn honour the Queen by wearing the Rose of England on Coronation Day.

Just as one of these emblems was worn by men and women from all the sectional parts of the United Kingdom, so should, and would be, the other, in commemoration of an event as worthy of being celebrated as any that is to be found in the historical records of the nation. Let those who wish to honour St. George, whoever he was, by wearing Roses when they are scarce and dear, do so. Vendors will not complain, and the great multitude will look complacently on; but on the 28th of June Roses will be everywhere, and everybody will understand the wearing of them then and readily join in the celebration. It would be a great floral demonstration of the affection in which the Queen is held, and of rejoicing that her reign has been of such unexampled duration and beneficence.

It is interesting, as the proposer of the movement observes, to remember "that far back in English history the Wars of the Roses, red and white, showed how bitter racial animosity divided England; and now the wearing of Roses, of all colours, would show how the old divisions and hatreds had been healed in this mode of celebrating Queen Victoria's reign."

How, when, and in what manner the Rose became the emblematical flower of England, perhaps Mr. William Paul could tell us. His fine work, the "Rose Garden," contains much—very much—that is highly interesting historically, but the particular point, if treated, has been overlooked by the present writer. That it was the favourite flower of the luxurious Roman emperors is clear enough; and we are told that about 2000 years have rolled away since Sappho christened it the "Queen of Flowers." This was done in the following lines, written, of course, in Pagan times:—

Would Jove appoint some flower to reign
In matchless beauty o'er the plain,
The Rose (mankind will all agree),
The Rose the queen of flowers should be;
The pride of plants, the grace of bowers,
The blush of meads, the eye of flowers;
Its beauties charm the gods above;
Its fragrance is the breath of love.

Associated with Royalty through past ages, and now a favourite flower of the Queen, also, no doubt, broadly speaking the most popular flower of the inhabitants of the United Kingdom, it would be appropriate that it be selected as commemorative of the longest reign in the annals of history, and so abundant are Roses on Coronation

Day that they would be within the means of the millions to obtain. If as suggested a "national Rose day" should be fixed, then would the fragrance of the flower in city, town, and village be dispensed as the "breath of love" by the people for their Queen.

The Roses, moreover, would not be the production of foreign lands, as would be the case largely if an abnormally large demand occurred at a season when our home growers could only produce them under glass. Under these circumstances enormous importations from southern Europe would be inevitable; but in our natural Rose season the flowers required for a Royal celebration would be grown in the gardens of the British Isles. This, as perhaps will be generally conceded, would be entirely appropriate; it would further have a tendency to induce thousands of persons to grow their own flowers for such a purpose, and thus widen still more the deserved popularity of the "queenly Rose."

Another word. On the occasion of the completion of the sixty years' reign of her Majesty in 1897—the Diamond Jubilee—the Royal Horticultural Society provided a Victoria Medal of Honour in Horticulture for commemorating the event in perpetuity. This medal can only of necessity be held by sixty recipients. If the society can by the exercise of its great authority be the means of bringing about the celebration of Coronation Day in the simple floral manner suggested, instead of pleasing sixty people, it would afford gratification to millions. A strong recommendation widely distributed would have a good chance of success, and in any event the endeavour would be regarded as most creditable, not only by the Fellows of the Society, but by members innumerable of every class in the community, from peer to peasant, who would like to unite in a common method throughout the United Kingdom of doing honour to the Queen.
—V. M. H.

Salsafy and Scorzonera.

THE culture and treatment of these esculent rooted vegetables are practically the same. They are grown from seeds sown at the present time. In selecting a position for their cultivation choose one that is open and sunny, and where the soil has been deeply trenched with the special view of growing tap-rooted vegetables. In this case the manure used is placed very low down as a thick layer, and none at all in the soil above. Roots will then grow straight down, but if there is manure in the upper layers the result will be that the roots divide and are contorted in shape. On the other hand manure in the lower spit induces the formation of long straight roots of a good size.

Previous to sowing the seed break up a piece of ground to a moderate depth with a fork, so that it may be well pulverised and freed from rough stones, which would hinder the growth of the roots. Avoid forking so deeply that the manure at the bottom would be disturbed. Having made the soil fine on the surface, and of a good tilth, draw drills 15 inches apart and $\frac{1}{2}$ inch deep. Scatter the seed thinly along the drills or place three or four together at a distance of one foot, eventually thinning to one plant when the seedlings have grown a few inches. The cultivation consists in keeping down weeds, and stirring the surface soil to promote growth. Should the plants produce flower heads nip these out as soon as seen.

Salsafy is a hardy biennial with white skin and white internal tissue of the roots, which are tapering in shape and under good cultivation long. Scorzonera is a Carrot shaped root, but the outside skin is dark, while the internal tissue is white. This root is good but not superior to Salsafy, which is termed the "Vegetable Oyster." Both are fit for use in October, but after that month the majority of the roots should be lifted, growth being then completed and the roots as large as they will be the first season. Carefully lift without breaking them, and twist off the leaves from the crowns in preference to cutting them off, this latter method causing a certain amount of bleeding or loss of sap. When dry store the roots in layers of sand in a dry cool place, and withdraw as wanted for cooking.—E. D. S.

**Odontoglossum luteo-purpureum Mossi.**

There are now numerous varieties of the handsome *Odontoglossum luteo-purpureum* in cultivation, and Mr. de Barri Crawshay, Rosefield, Sevenoaks, has provided still another, and it has been named *O. l.-p. Mossi*. This is represented in the illustration (fig. 96), in which the strikingly handsome form of this variety can be readily seen. The sepals and petals are yellow, but this colour is almost wholly obscured at the base by brown, and the whole shines as if with a coat of varnish. The lip is very beautiful. The chastely fimbriated front portion is pure white with reddish brown at the base. The Orchid Committee of the Royal Horticultural Society at the meeting held in the Drill Hall on Tuesday, April 10th, recommended to *O. luteo-purpureum* an award of merit.

Cypripedium bellatulum album.

The typical *Cypripedium bellatulum*, that is so well known and so highly appreciated by Orchid growers, is fortunately abundant, and with reasonable care thrives well in most places. The white *C. bellatulum album* (fig. 97) is much choicer and rarer, and we are not surprised that a correspondent, signing himself "An Amateur Orchid Grower," has not met with it. Examples have nevertheless been exhibited occasionally at the meetings of the Royal Horticultural Society, where it was first shown by Mr. W. H. Young on June 11th, 1895. The flower is, as may be seen in the engraving, of perfect form, while the colour is pure white. On the occasion of its initial appearance at the Drill Hall it was accorded a first-class certificate by the unanimous vote of the Orchid Committee. It is described in the Journal of the Royal Horticultural Society as "a pure white unspotted form of great beauty."

Cypripedium bellatulum.

Excepting under very favourable circumstances I doubt whether this Orchid could be grown in a cool greenhouse. It is not so much a matter of temperature, as congenial atmospherical surroundings, which, for Orchids, can seldom be obtained in ordinary greenhouses. However, as this attractive species is not an expensive one to buy, an attempt, even if it resulted in failure, would not cost much. Established plants should, in this case, be suspended in a position where the

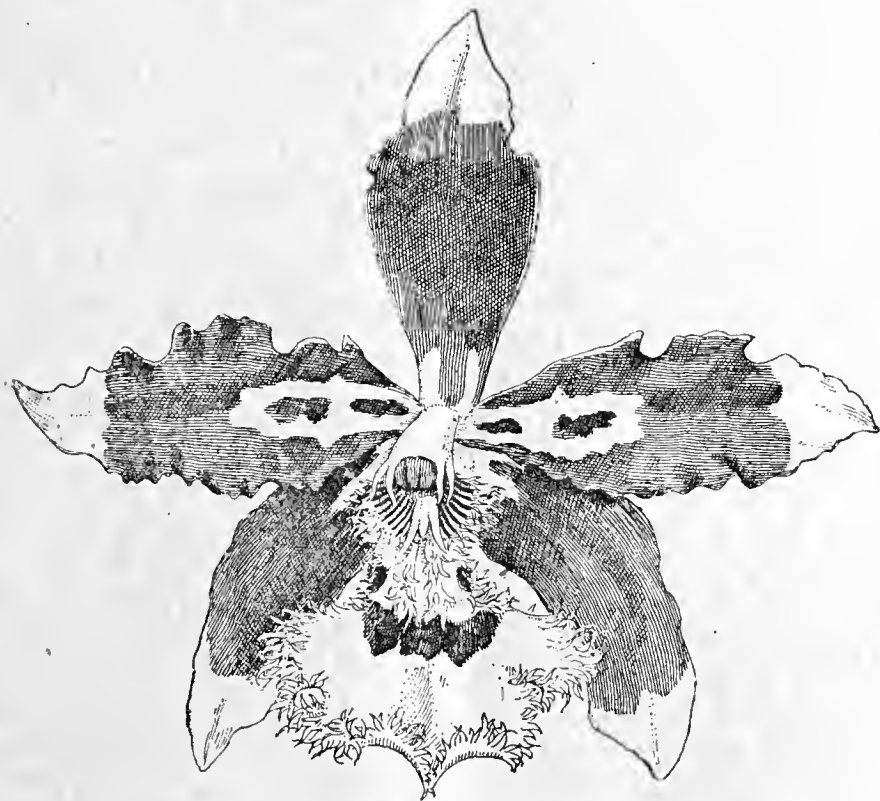


FIG. 96.—ODONTOGLOSSUM LUTEO-PURPUREUM MOSSI.

greatest amount of moisture is secured, and where the air is fresh and pure but not draughty. In a structure of this class shading would hardly be necessary. Water should be given by immersing the pots or pans to their rims in tepid rain water, so that all chance of any lodging in the axils of the leaves is removed. A simple way to tell whether

the plants require water or not is to gently bend a leaf, and if the action cause wrinkles more water is needed, but if stiff and rigid, sufficient moisture is present in the soil. Less harm will follow dryness at the root than prolonged saturation.—W. H. YOUNG.

Dendrobium Bullerianum.

This very pretty *Dendrobium* has never been common in collections, and is now seldom seen, yet it is one of the best of the showy flowered deciduous species, not unlike *D. Devonianum*, but rather stouter in growth. The flowers appear in the usual manner of its class along the last year's stems, and are about a couple of inches across, with rosy purple tips to the whitish sepals and a large yellow disc to the lip. It likes an ample moisture supply when growing, especially in the atmosphere, and may be kept quite dry while at rest in winter.

Mormodes luxatum.

I recently noted some very fine spikes of this Orchid, a plant that some may think more curious than beautiful. I consider it one of the best in the genus, but it is not often, I think, seen in flower so early. This may be accounted for by the fact that the plants have been kept in heat all the winter, not the wisest of proceedings according to my

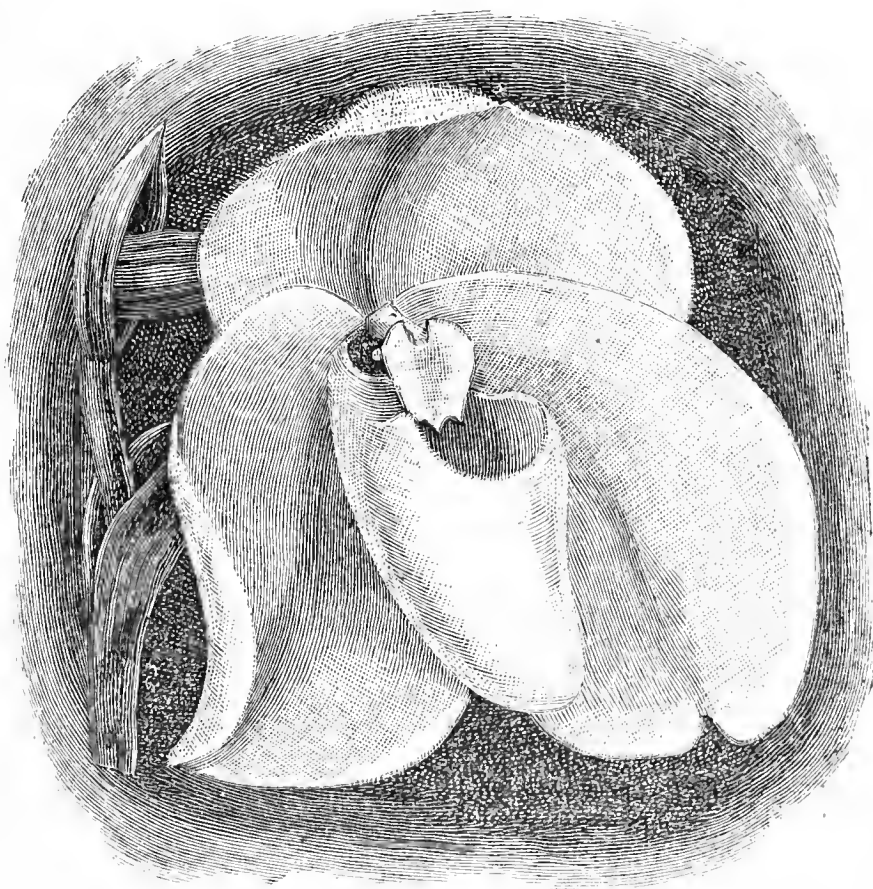


FIG. 97.—CYPRIPEIDIUM BELLATULUM ALBUM.

experience of it. I have found it do well when wintered on the dry side in the Cattleya house, exposed as much as possible to the sun and allowed plenty of air.

In early spring more heat ought to be allowed, and the change should be rather quickly brought about, this being conducive to free flowering. The plants should remain in heat until the growth—and the spikes if any appear—are progressing freely, and finished with ample sunlight in a more airy if not a cooler house. Although the flowers last a little longer in a cool dry house, it is not wise to keep them out of their growing quarters too long, as the young heads are apt to be checked, and this may prevent their flowering the succeeding season. In colour the blossoms vary considerably, the type having yellowish flowers, slightly rose red, with reddish brown. The creamy white variety *eburneum* and the spotted *punctatum* are both charming forms.

Odontoglossum Mulus.

The origin of this species or variety has always been doubtful, many considering it a hybrid between *O. luteo-purpureum* and *O. gloriosum*. It has always struck me as having a little of *O. Halli* in it, but whatever its origin, it is a fine garden Orchid—free flowering and very handsome. I have known it to produce branching spikes with flowers larger than the majority of *O. luteo-purpureum*, and the blotches are in some cases clean cut and bold, like those of *O. Wilckeanum*. It is easily grown, thriving well in a cool house under the conditions usually allowed for *O. crispum*.—H. R. R.

Royal Horticultural Society.

Special General Meeting, April 25th.

THIS meeting was called with a view to the consideration and sanction, if approved, of new bye-laws, which were rendered necessary under the new charter of the society; to consider the desirability of removing the gardens of the society from Chiswick to some more suitable site as a means of celebrating the centenary of the society, which is now rapidly approaching; and to consider the desirability of the society collaborating with certain other bodies to establish on the new garden a school of horticulture. As is customary, the president, Sir Trevor Lawrence, Bart., occupied the chair, and he was supported at the table by Sir John T. D. Llewelyn, Bart., M.P., and Messrs. J. T. Bennett Poë, T. B. Haywood, C. E. Shea, Frank Lloyd, W. Marshall, P. Crowley, Jas. Hudson, and the Rev. W. Wilks. Amongst the Fellows present were Sir Wm. Thiselton Dyer, Sir Michael Foster, Dr. Maxwell T. Masters, and Messrs. G. Paul, G. Bunyard, G. Nicholson, H. J. Pearson, R. Wilson Ker, W. Watson, C. T. Drury, H. Balderson, J. Douglas, G. Gordon, G. Wythes, J. Wright, W. H. Divers, E. Beckett, H. Pinches, L. Castle, A. Dean, J. Weathers, C. J. Salter, J. Cheal, A. Mortimer, C. E. Pearson, H. S. Rivers, W. Roupe l, with many others.

It was originally intended that the meeting be held in the Lindley Library, but as the accommodation there is limited, it was resolved to go to the canteen of the London Scottish Drill Hall, and though this room was not packed there was a goodly attendance. The removal, of which no notice had previously been given, caused some delay, and several Fellows were late from this cause alone. There was apparent an air of suppressed expectation, and the participators in the meeting waited developments. It was generally surmised that the policy of the council would be severely criticised, and this proved to be the case, though practically nothing definite was decided at the meeting.

After the notice convening the meeting had been read by the secretary, the president brought forward the first recommendation of the council respecting the adoption of the bye-laws. These were, he said, rendered necessary by the new charter, and considerable time and care had been expended upon their formation by the society's legal advisers in endeavouring to bring them up to date, to make them thoroughly applicable to the society at the present day, and to reduce so far as possible the somewhat unwieldy length that had hitherto characterised them. Sir Trevor suggested in view of the fact that they had been available for consideration by the Fellows for several days that they should be taken as read, but this was met by almost general dissent on the part of those present. Sir Wm. Thiselton Dyer and Sir Michael Foster evidently voiced the views of the majority of the Fellows when they protested against the non-distribution of these bye-laws to the Fellows in order that they might be thoroughly considered and digested prior to the meeting. It was thought that a document of such moment was worthy to have been posted in a formal and official manner. Sir William concluded by moving that the consideration of the bye-laws be deferred to a subsequent meeting, so that Fellows might study them, and if necessary bring forward various alterations or amendments. Dr. Masters seconded this. Sir William also protested against the manner in which the notice convening the meeting had been distributed, and received the support of Surgeon-Major Hince, who however, considered the bye-laws excellent. Before putting Sir William Dyer's motion, Sir Trevor Lawrence pointed out that the council had no objection to an adjournment, but that the society's lawyers had pointed out that the new charter abrogated the old bye-laws, and that they were now a society without laws. Mr. A. Dean said he had sent a stamp for the bye-laws, and had received them, and supposed that other Fellows could have done the same, and that personal application had not been necessary. The proposal for adjournment was, however, carried by a large majority. The suggested bye-laws will be distributed to all the Fellows prior to next meeting.

This matter having been disposed of, Sir Trevor rose to refer to the second portion of the business of the meeting. This had reference to the most suitable means for celebrating the centenary of the society. He referred to the fact that at the annual meeting held in February he had spoken at some length of the scheme that should be adopted, and that he had then affirmed that the most popular means of celebration would be the provision of a central hall of horticulture. To this opinion he still adhered, but the difficulty of finances had to be faced. The Fellows were, no doubt, aware, continued the speaker, of the strenuous endeavours that were made some years back by Baron Schröder to establish such a hall, when the whole matter was seriously discussed, and it was estimated that a sum of at least £40,000 was absolutely essential, of which only £27,000 were forthcoming. Thus the scheme collapsed, and, so far as he could see, the prospects of to-day were no brighter. This not commending itself to the council as feasible, it was recommended that the garden be removed from Chiswick. In dealing with this the council

had considered the fact that the society had still twenty years as the residue of the lease, and that this must be regarded as a valuable asset. Personally, continued Sir Trevor, he had never considered Chiswick good enough for the society; it was too small, and lacked that variety of soil and aspect in which lies, to a large degree, the value of such a garden. Moreover, the garden was becoming more and more enclosed by villa residences and some factories, and the soil was yearly becoming poorer and poorer. The council had, bearing these and many other facts in mind, decided that the most suitable means of celebration was the establishment of a new garden, and in this view the members at the general meeting in February had acquiesced, and Sir Trevor did not think they would now go back on the assent then given. No ground was then specifically mentioned, as many sites were under inspection and discussion, and in conclusion the speaker moved that the meeting should confirm the recommendation of the council to remove the garden from Chiswick.

Mr. H. J. Elwes was the next speaker, and occupied the meeting at some considerable length. At the outset he stated that it was obviously impossible for the meeting to decide upon the abandonment of the old garden until a new one had been found. He was, he affirmed, reluctant to come into opposition to the council, but he considered it necessary in the best interests of the society. He laid great stress upon the importance of unanimity of the council in such an important matter, and pointed to the resignation of Mr. Arthur Sutton, as the latter gentleman could not agree to the council's recommendations. He stated that he had not received a notice of the meeting, but this must have been owing to an oversight, as each copy of the recently issued *Journal* had contained to the notice on red paper. He considered the several reasons, such as the soil and situation being unfavourable invalid, as there were several neighbouring gardens of great excellence. He would not, however, oppose removal if something better could be found. He made some references to financial matters, but Sir Trevor Lawrence pointed out that he was not apparently so well qualified to speak on these as on the gardening aspect of the case, as he was inaccurate in several essential points. Mr. J. Weathers supported Mr. Elwes' motion that the two schemes relative to the new garden and the acquisition of a site at Limpsfield be considered as one, but it was not put to the vote. Mr. G. Paul was emphatically of the opinion that Chiswick was exhausted.

Sir Trevor Lawrence then brought forward the motion that the garden should be removed from Chiswick, and this was seconded by Sir John Llewelyn, and it was eventually carried unanimously with an important addition from Mr. H. J. Pearson—"subject to the Council finding a new garden that was acceptable to the majority of the Fellows of the society." Mr. Roupell thought it would be better to retain the old garden, and was of the opinion that it sounded peculiar for such a society to lay itself out to teach the art of horticulture, at the same time as it acknowledged its inability to renovate its own ground. Mr. Roupell's assertion that the fogs of London were not so bad as they were in the past was received with some derision, and certainly is not in agreement with the majority of London horticulturists, who, as a rule, hold the view that they are decidedly worse.

Sir Michael Foster followed with some pertinent remarks regarding the immeasurably more popular notion that a hall should be the means of celebrating the centenary, and said he had yet to learn that much good could not be done with a smaller sum than £40,000; but Sir Trevor Lawrence dissented strongly from this view, for reasons that he had already set forth.

The chairman at this point considered it desirable to assure the meeting that the council had not gone into this matter with their eyes shut, but had done the very best that could be done. He referred to the fact that several sites had been carefully inspected by experts, but all had been rejected except Limpsfield, upon which the report was favourable, save that the land having been neglected it would require much labour and especially perfect drainage to bring it into proper working condition. The council, he said, welcomed the criticisms of the several gentlemen who had spoken, as there could be no doubt that they were given in the friendliest spirit, and because the speakers had the very best interests of the society at heart. He then suggested that the meeting be adjourned, and promised that proper notice of the date of the next meeting should be given.

Sir William Dyer said the meeting would be sorry to dissolve without acknowledging the conciliatory manner in which the council had received the various remarks, and considered the tone of the meeting augured well for the future of the society.

It was then asked if the council would receive recommendations from Fellows as to other sites, and an answer in the affirmative was given. Mr. Gordon wanted to know something about Limpsfield, but this question was relegated to the subsequent meeting, Sir Trevor Lawrence remarking that the society was not committed in any way.

On the proposition of Surgeon-Major Hince, seconded by Mr. Balderson, a hearty vote of thanks was accorded to Sir Trevor Lawrence for his services in the chair.

Basal Rot in Narcissi.

THE present moment, when many hundreds of thousands of Daffodils will be in bloom, cannot be other than opportune for putting forth the exhaustive paper by Mr. Wm. Crawford, M.D., Uddingston, N.B., which was read at the Royal Botanic Gardens. We extract this from the quarterly record of the Royal Botanic Society of London, and commend it to the particular notice of our readers as containing valuable information relative to the disease, and also embodying suggestions for its prevention.

Of all the difficulties surrounding the growing of Narcissi, either on a large scale for commercial purposes, or on a smaller scale for pleasure, none are so disappointing as that insidious decay which the Rev. Wolley Dod was the first to describe and call by the name of "basal rot." The whole question of successful culture is bound up in this term, and while an occasional bulb may go down through the ravages of the *Narcissus* grub, whole plots of certain varieties may be swept away in two seasons by decay.

As a boy I was struck with the impossibility of growing the wild "scoticus" of our glens in the cultivated flower border, and, in more recent years, when I began to form a collection, I was met by the same difficulty in very many varieties. My first collection, over ten years ago, was planted under the same cultural conditions with very unsatisfactory results, and I was at once convinced that the varieties of *Narcissus* springing from such varied conditions of cross-fertilisation and in-breeding required very dissimilar treatment, for while single and double poeticus Van Sion and many of the bicolors (planted in porous soils) revel in heavy mulchings of farmyard manure; the spurious class and white trumpet section sicken and die in two years in the same soil, under what would be styled for any other plant very careful treatment.

Nature's Rules.

Now Nature, though slow, is a sure and safe guide, and it will be well to turn for a moment to her and learn how she deals with the *Narcissus*. Our native Lent Lily, which has a wide distribution over the whole of the western counties of Scotland, is found in its greatest luxuriance in sloping woods and glens where the soil has been undisturbed by the hand of man. If this plant is put into cultivated soil it goes down immediately. Reasoning from these data we may arrive at the conditions necessary to healthy culture and the conditions leading to disease. In the uncultivated soil "scoticus" received the plant food which ministered to its perfect development; in the cultivated soil it met with something over which it sickened and died. It is our purpose to find out what that something is, and the correct rendering of it will be a solution of the "basal rot" question.

All plant food resolves itself into four elements: Nitrogen, phosphoric acid, potash, and lime; these four are essential to all perfect plant formation. Yet we find whole families of plants that have a special preference for one element more than another—the Grasses delighting in nitrogen, the Brassica family in phosphoric acid, the Leguminosæ in potash; and all successful manuring is comprehended in supplying the special wants of the plant. In the vegetable, as in the animal kingdom, what is one's food is another's poison, and this is particularly so of the *Narcissus*. The *Narcissus* is a phosphate and potash-loving plant; evidently the slightest quantity of free nitrogen or ammoniacal compounds is poisonous to it. In uncultivated soil, Nature has formed her plan, that there is no excess of nitrogenous compounds from decaying manure, and the potash and phosphatic elements have not been eaten out of it by continuous cropping; but the very reverse occurs in the cultivated border, where there is an excess of ammoniacal compounds with generally a deficiency of potash and phosphates. The balance of manurial ingredients is reversed, and the bulb falls a victim to those changes (caused by microbic action), which are going on in cultivated soils.

The Physical Signs of Basal Rot.

It is not necessary for me to detain you with a description of the outward or physical signs of "basal rot." There are just two to which I would draw particular attention, as the one is a guide to a choice of bulbs while buying, and the other the first indication that something is wrong with the stock. The first sign is that of the brown thumb-like markings on bulbs that are just affected; these markings may be very slight or run into a burnt and scrubby appearance of the whole outer tunic of the bulb. Avoid such bulbs however little they are marked, as they are already infested with the microbe "*Penicilium*." The second sign is the stunting and clubbing of the foliage, with the ends of the leaves withered. The vascular bundles of what we might call the inner or feathered side of the leaf atrophy, while the vascular bundles of the outer side continuing to grow, cause a clubbing of the leaf. This is a sure sign that the stock is affected. The foliage of such bulbs will die down a considerable time before the foliage of healthy bulbs. All such bulbs should be lifted whenever the foliage dies down, and be well dried during the summer.

The microscopic examination of the bulb demands our earnest attention, because, if my contention is correct, we shall find in it the

true secret of "basal rot." I have been fortunate in having the aid of an expert microscopist in determining in every instance that the microbe "*Penicilium*" was the active injurious agent in all bulbs affected with basal rot. I need not go further into the methods of examination than to say that seemingly healthy portions of diseased bulbs cultivated in Koch's jelly always revealed this organism.

I am quite sensible that I shall be met with the reminder that this "*Penicilium*" is nothing more than the mould or fungus which affects all vegetable substances in the processes of decay—that it is in no sense specific to the bulb as the Potato fungus is specific in causing the Potato disease. My answer is, that it is quite possible that this "*Penicilium*" is specific in the sense that it has more affinity for bulbous structures than it has for ordinary decaying vegetable products, and that when bulbs are planted in such soils they immediately begin to suffer. All cultivated soils are teeming with this microbe, especially near the surface, but the organisms become fewer deeper down, until a depth is reached beyond the ordinary cultivated area where they are absent. Wherever one has decaying manure or vegetable products giving rise to ammoniacal compounds, one has "*Penicilium*." In such soils bulbs, especially of the spurious class or white section—what we might call inbred bulbs with delicate constitutions—will fall a prey to this germ or fungus. I look upon the species of *Acarus* or mites, which some observers have described, as scavengers, eating up and clearing away the already all but dead bulbs.

If my reasoning is not correct, how otherwise is it that *Narcissus* "scoticus," one of the hardiest plants in its native habitat, fails immediately it is placed in cultivated soil? It is not that it is starved in the rich border—it is that it is poisoned with ammoniacal compounds and infested with the fungus "*Penicilium*."

Experiments in the Prevention of the Disease.

At first, as a safety, I tried various expedients to ward off the "*Penicilium*"—surrounding my bulbs with rough sand, soil from banks of rivers, and road grit—with partial success. Some have used burnt clay, which is simply soil sterilised and freed from the "*Penicilium*." I look upon all these as antiseptic screens. But sooner or later the *Penicilium* will pass through these, or perhaps, entering the bulbs through attacking the roots, will destroy them.

The conclusion I have come to is that with deep planting where "*Penicilium*" may be either few or absent; with antiseptic screens of various kinds and yearly lifting one may get on fairly well in cultivated soils; but to be really successful one must go back to Nature's plan, and use soils that have long lain undisturbed—that are free from decomposing vegetable or manurial ingredients, and consequently free from "*Penicilium*." In such soils, with a dressing of phosphatic slag-meal at planting and a dusting of potash over the beds about the end of January, ample success will follow. And to make surety doubly sure, sow the beds with fine lawn grass seed, and there will be little to fear. The grass, with its strong affinity for nitrogenous compounds, will speedily clear the ground of these, and leave nothing for the fungus "*penicilium*" to make a *nidus* of. This is the reason why Daffodils do so well in grass.

My own plan is to plant in an old grass field, turning the turf well down. After opening the trench, I gave a good dusting of slag-phosphate into the bottom of the trench. Next I put in a layer of marl. This is a pure carbonate of lime found extensively on the sea shore in the neighbourhood. Into this marl I plant my bulbs and give them more on the top, until, I may say, they are completely surrounded with an agent in which no germs can possibly be present. As anyone who has used potash in growing bush fruit, and knows its value, it is wise to dust the beds through the winter with a sprinkling of the sulphate of potash or with kainit, to give abundance of flowers of a fine colour and texture. For those who work on a smaller scale and cannot get old lea land to turn down, the proper plan is to sow down the bed with grass seed the first season and plant the bulbs in the grass the next. By this time the land will be becoming free of the nitrogenous compounds which give rise to and perpetuate the "*penicilium*;" in other words, the grass will have eaten them out for its own nourishment, and the land will be what is called mellow or sweet.

There is no doubt that the Dutch growers largely save their stocks by yearly lifting and drying; but they also complain that they have a great difficulty of growing many varieties in their highly cultivated soils, though they are wise enough to manure the previous crop before planting *Narcissus*. They take a crop of Potatoes or other produce off the ground, which removes the greater part of the ammoniacal compounds and leaves the soil freer of nitrogen. But even with this treatment, many Dutch stocks are affected when they arrive in this country; and sometimes one is apt to blame one's own soil when the disease was already present in the bulb at planting. I look on the Dutch system of growing as a rushing of the bulb through its active state of growth. By planting in the autumn, when the vital action of the bulb starts, and lifting in the early summer, when it ceases, the very vitality of the bulb wards off the disease. Were the Dutchmen to allow their bulbs to lie in their heavily manured ground all the summer through, the results, I fear, would be disastrous, for the "*Penicilium*" is much more active in warm than in cold weather. The serious losses that I had at first occurred during the summer, when the bulbs were allowed to lie for increase.

Deductions from Personal Observations.

These, then, are the conclusions I have come to—that the widespread disease of Narcissus bulbs which has come to receive the name of “basal rot” is caused by an active injurious fungus—viz., “*Penicillium*”—specific in the sense that it has a special affinity for bulbous structures; that it occurs always, if not altogether, in cultivated soils infested with the fungus, and where there are present free ammoniacal or nitrogenous compounds; that all injurious agencies affecting bulbs, such as frost, late planting, half-ripened roots, cause the bulbs to fall an easier prey to the disease; that healthy culture consists in choosing a mellow soil, free from nitrogenous compounds, or in rendering the soil mellow by first growing on it a crop which will free it of nitrogen (and perhaps the best crop for this is grass); that the disease may be warded off by allowing the roots to lie only sufficiently long to cover the growing or active stage; that they require deep planting if there is fear of disease; that they require plant food in the way of phosphates at planting and potash later on; and with all these, as a further precaution they may be surrounded in the ground by some agent that is known to be free from *Penicillium*.

“Home and Garden.”*

THIS is a book over which the appreciative reader will gladly linger, forgetting the toil and turmoil of everyday life, and even the reviewer may abate somewhat of his customary speed. It is one of the advantages of our numerous free libraries that books like the present, which otherwise could only be found in the homes of the wealthy, are brought within the reach of any ratepayer. Many a reader has little chance of imitating what is so happily described in these pages, still, even to him or her, its contents may bring pleasure, showing how delightful a home and its surroundings can be made. In an age distinguished by its tendency to seek enjoyment everywhere but in the home, we welcome every book which endeavours to give it new fascinations, and point out its neglected privileges. Someone has said that the word “home” is peculiarly English. Other languages have been explored in vain for its counterpart, still the foreign equivalent of “asylum” comes near to its meaning—a place that should afford a secure retreat, if possible. But it is rather pathetic that Miss Jekyll had to conclude her preface with a request that her friends, known and unknown, would allow her somewhat more of “peace and privacy.” Popularity may have its advantages, yet it also brings frequent sundry annoyances to the possessor.

Both Nature and Art are made contributors to the contents of this agreeably diversified volume, which proves the authoress to be a keen observer, and perceptive of the poetry which often irradiates what to the ordinary person is a commonplace object. Then the book is so full of kindness and healthy optimism that we feel there is some excuse for those who, knowing Miss Jekyll only by her pen, have wished to be acquainted with the scenes she has depicted, and the authoress too. The villagers casually mentioned, and the very wonderful pussies, seem almost to be friends of our own. Wisely, the locality is not indicated, but a passing remark leads us to surmise it is in Hampshire or in Sussex. To us, the interest of the book is largely in the chapters that discourse on wild or garden flowers, vegetables, and trees; still, those upon the house itself and the workshop appeal to all in some degree. Curious and beautiful again were some of the articles stored or on view in this home. One would fain admire the ancient tear bottles, the bronze or green coins, the Venetian glass, the Florentine stuffs, the embroideries of gold and colours, the rare English patchwork.

Many people, having verified the jocose saying that a house is an instrument of torture constructed by builders, have resolved to build one embodying their ideal. Two or three personal friends have done so; unfortunately, the result was less satisfactory than was expected, probably illustrating the risk of speculating where one has had no experience. Very likely Miss Jekyll's success is to be attributed to the fact that architect, builder, and owner worked together harmoniously, and she had first-class materials, which some amateur builders will not afford. Wood, chiefly Oak, grown close by; sandstone of the adjacent hills; bricks, probably such as no London builder could get; no wonder a good and secure house was erected, that might brave the centuries. Miss Jekyll allows, however, some excellencies to the London builder; he has method and precision, but his bricks are apt to be bad, his wood unseasoned, and he does not build substantially for the most part. “What's the good?” he would say, “you never know how soon you may have to pull it down.” One point to which Miss Jekyll gave special heed is constantly neglected. She had all fittings—for instance, the hinges, bolts, locks—proportioned

in size and strength to the material on which they were put. There may be pleasure found in both the sights and sounds of building operations, as Miss Jekyll suggests, but it must be under certain circumstances—not amid the clatter of suburban bricklayers and carpenters.

But we pass from the house to the woodland, since her chapter on a visit in April is appropriate to the season, though I doubt whether this cold spring, even in that locality, the wild flowers can be numerous. We may quote a part of the authoress's description of the Woodsorrel, a plant much in evidence recently, showing how minutely she observes. “The tender little blossom is about as white as the lightest part of a pearl. Its downy stalk is flesh-coloured and half-transparent, and the delicately formed calyx is painted with faint tints of dull green edged with transparent greenish buff, and is based and tipped with a reddish purple that recalls the veining of the petals. The brilliant yellow-green leaf is a trefoil of three broad little hearts, each joined at its point to the upright stalk by a tiny stalklet just long enough to keep the leaf divisions well apart.” Miss Jekyll names, among the flowers of April, the Violet, Primrose, Dog's Mercury, Cinquefoil, Stitchwort, Arum, and the Burdock, a plant she much admires, considering it worthy of a place in gardens. It has, she says, “a grand wave of edge and strength of line,” the grandeur of the Gourd tribe without their weakness. We have also noticed what a curious tangle of stems and branches a group of old Laurels will produce, as she has remarked, when left untouched in a shrubbery. Of course the species meant is the *Cerasus Lauro-cerasus*, not the Bay or true Laurel, but what the early botanists called the Bay Cherry. The Portugal Laurel has longer racemes, and is more erect in habit.

“The Garden of Wallflowers” is a chapter appropriate just now, but the authoress had not a garden all of them, only banks devoted to the forms she cultivates; associated with them are Vincas and Acanthus. But the authoress's idea of a Wallflower garden is that of one where many of them are grown upon walls, variously planned, as well as on banks. For contrast, she would add some patches of Tulips, Aubrietias, yellow Alyssum, *Corydalis capnoides*, and sundry others. It is, however, in the chapters on “Roses and Lilies,” “Briar Roses,” and “Midsummer,” that Miss Jekyll seems to be at her best, and these have illustrations that are specially attractive. A lover of all flowers, she gives the chief place to the Rose and the Lily, or such species as are so styled, if not in botanical strictness. To the Briars Miss Jekyll is partial, as representing old style garden plants; the Scotch, she says, have beauty nearly all the year. Of the many Briars grown nothing surpasses the double white Blanche de Coubert. After commenting on Lilies and Irises, Miss Jekyll remarks that some of the commoner kinds really have excellent qualities, *L. croceum*, for instance, which thrives in London; it is the Herring Lily of the Dutch, as flowering when the great hauls of herrings occur. By management it will make a grand show in the borders, like *L. tigrinum*. Referring to midsummer, she states that in her county its arrival is announced by the Elder bloom being fully out.

The chapter on “Trees and Lanes” appeals to our human sympathies, since the life of cottagers is touched upon, and we have portraits of Mary Huntingford and James Furlonger. That quaint old fashioned cottages, farmhouses, too, are often unhealthy we know. About Kent we see many samples of what Miss Jekyll depicts in her county. Bricks or boards in the lower floors laid flat on the earth, possibly with a green growth under them, low ceilinged rooms, above and below drafty or stuffy, roofs seldom sound, and drainage lacking; yet somehow people lived, even thrived in them. They had pure air, and, for ourselves, we would rather occupy such a cottage than an up-to-date London flat. But they might have given these buildings some slight elevation generally, sometimes they are below the level of the adjacent ground.

To the botanist a part of the above chapter will be acceptable, as it contains observations on methods of growth and development, also on the effect produced by the earth breaking away from the roots of trees. We might commend the chapters on rock gardens. That on “Plants for Poor Soils” and “Gardening for Short Tenancies” are replete with useful matter for gardeners. Again, there is in “Conservatories” many valuable suggestions. Thus the authoress plans out a series arranged according to temperatures—the outer houses in a circle for show, the centre for service. Much more might be made, she thinks, of the winter garden under glass—a place not without its flowers, but displaying chiefly species having handsome foliage, and kept at a temperature that persons could sit or walk about, and feel no inconvenience.

“The Kinship of Common Tools” is only a short chapter, yet it appeals to most of us workers, particularly in regard to the love we come to feel for an implement which is our constant companion, while it enables us to turn out some of our valued work. We must confess to a strong regard for an old penholder, which we have handled frequently during twenty years. From the authoress's name, we are tempted to conjecture she is of Scottish descent—one in the long illustrious roll of North Britain's devotees of gardening.

* Home and Garden: Notes and Thoughts, Practical and Critical, of a Worker in Both. By Gertrude Jekyll. London: Longmans, Green & Co.

NOTES & NOTICES

Recent Weather in London.—On Saturday and Sunday Londoners had apparently been dropped into the middle of June, for the heat was great. Overcoats were left at home, and straw hats became the order of the day. The nights continued moderately cool considering the heat of the day. On Monday and Tuesday though dull in the morning it became clear and quite warm later. Wednesday opened cold and wet.

Weather in the North.—With an occasional dull forenoon or evening the weather of the past week has been extremely fine for the season, the 19th and the two following days especially so. The wind set into the east on Saturday evening, and rain fell during the night. Sunday was dull; Monday brought alternately sunshine and heavy showers.—B. D., S. Perthshire.

Royal Horticultural Society of Ireland.—In your brief report of the spring show of the above society, I notice no allusion was made to the new double Violet, *The Countess of Caledon*, which was staged by Mr. Jeffreys, gardener to the Earl of Caledon, Caledon Park, Tyrone. It is much finer than *Marie Louise*, with greater substance of petal, and in shade a pale lavender or heliotrope. The exhibitor was awarded a certificate. Mr. Jeffreys' dish of Strawberries contained the finest fruits ever shown in Dublin. Several specimens weighed over 2 ozs., and six of them cleared the scales at 13½ ozs.

Sheffield Chrysanthemum Society.—Upwards of seventy members were present, at a recent meeting, to hear Mr. H. J. Jones, of Ryecroft Nursery, Lewisham, give an excellent lecture entitled "Chrysanthemum Culture on the Newest System for Growing Flowers for Exhibition." Mr. Jones spoke at some length on propagation, and recommended the cuttings to be inserted in boxes instead of pots, letting them have plenty of light and space at all times, and keeping them in a temperature of from 45° to 50° until ready for 3-inch pots. He considered that early varieties were best pinched the third week in March, and later ones the first week in May, giving preference to second crown buds. The lecture was most interesting.

Minnesota Horticultural School.—Minnesota now boasts one of the most complete horticultural buildings connected with a school or college in the United States. It was completed and occupied January 1st, 1900, and is connected with the Minnesota School of Agriculture and Experiment Station, St. Anthony Park. The building and equipment, according to "Meehan's Monthly," cost 67,000 dols., and consists of a main building, an annex for a greenhouse, laboratory, machine shed, about 4000 feet of glass, and a good nursery cellar. A large number of students can be accommodated. This term the classes in horticulture number 178. A very important feature of the school work consists of practice by the students of seed-sowing, transplanting, the growing of plants by cutting and grafting, the packing of nursery stock, pollination, testing of seeds, the making of Bordeaux mixture and grafting wax, and similar horticultural operations.

National Chrysanthemum Society.—The annual report and the schedules of the shows to be held during the coming autumn have reached us from the secretary, Mr. R. Dean, V.M.H., Ranelagh Road, Ealing. The report has already been dealt with in our columns, and we need therefore only call attention to the schedules at the present moment. The early autumn show will be held on October 9th, 10th, and 11th, and, as usual, the quality at this early date will be governed wholly by the season. The principal exhibition opens on Tuesday, November 6th, and continues over the two following days. This is invariably most excellent, and it is scarcely likely to prove an exception this season. Numerous valuable special prizes are offered for competition, in addition to the ordinary ones of the society. The president (Sir Edwin Saunders) offers a premier prize of £15 for a floral display of Chrysanthemums and suitable foliage plants, and other awards of £10, £8, and £6 will be given by the society. This should prove to be a splendid class. The dates chosen for the early winter show are December 4th, 5th, and 6th. Full particulars may be had from the secretary at the address given above.

Alexander College.—An effective piece of floral decoration was seen at this educational establishment on the occasion of the recent visit of some members of the Royal Family, and the Lord Lieutenant and party. The task of opening some new wings devolved upon H.R.H. Princess Christian. The various halls were decorated with Daffodils, the principal variety utilised being *maximus*, from Mr. Hartland, Cork, whilst Miss F. Currey, of Lismore, forwarded a choice collection of the leading types, which were suitably displayed in one of the class rooms. A handsome bouquet of Shamrock and white Narcissi was presented to H.R.H. Princess Christian.

Croydon Horticultural Society.—The schedule for the show of this society, which is to be held in the grounds of Brickwood House, Addiscombe Road, on Wednesday, July 4th, is now published, and may be obtained from the secretary, Mr. A. C. Roffey, St. Andrews Villa, 55, Church Road, Croydon. Particulars are given of upwards of 100 classes, embracing practically all the products in season at that moment of the year. Roses are always an excellent feature, and this year, provided we are favoured with a propitious season, will probably prove no exception to the rule. There are numerous local as well as open classes, and so far as can be seen provision has been made for all sections of growers.

New Ross Agricultural Society.—At a recent meeting of the New Ross District Council a motion was put forward tentatively, namely, the starting of an Agricultural Society for New Ross. As a result, a number of influential men assembled in the Grand Jury room, on April 19th, with the object of taking the necessary preliminary steps to bring the motion into concrete form. The chair was occupied by Captain Barrett-Hamilton, and after a brief discussion a committee was formed. The following consented to undertake the secretarial duties: Messrs. A. Tyndall, J.P., Ballyanne, and John Jeffares, Seark. Prior to the dissolution of the meeting it was unanimously decided that a general meeting be held in New Ross on the next fair day.

Linnean Society.—At the last meeting of this society under the presidency of Mr. C. B. Clarke, F.R.S., Dr. D. H. Scott, F.R.S., read a paper on "Sphenophyllum and its Allies, an Extinct Division of the Vascular Cryptogams." The author explained that his purpose was not to communicate new observations, but to give a summary of our present knowledge of the group and to discuss its affinities. He pointed out that the study of the Palæozoic flora not only greatly widens our conception of the three existing classes of Pteridophyta, but adds a fourth—that of the Sphenophyllales—to their number. The different views which have been held as to affinities of the Sphenophyllales were then discussed in the light of the results recently attained. The supposed relation to Hydropteridæ, though supported by some ingenious arguments, was rejected as baseless, and as inconsistent with the manifest Filicinean affinities of that family. The author came to the conclusion that the Sphenophyllales were most naturally regarded as the derivatives of a synthetic group, combining the characters of Lycopods and Equisetales, and indicating the common origin of those two classes.

Ipswich and District Gardeners' Association.—At a recent meeting of this association, Mr. Geo. Gilbert presiding, a paper on "Daffodils" was read by Mr. R. C. Notcutt, vice-president of the association. The paper was illustrated by a large selection of specimen blooms, a number of which had been kindly sent for the purpose by Messrs. Barr & Sons, T. S. Ware & Co., Ltd., and E. J. W. Disbrowe, of Bennington. The essayist commenced by giving some account of the history of the Narcissus, pointing out that it was quite a flower of antiquity, and well known to the ancients. Reference was made to the existence of the Daffodil in a wild state, over the whole of Western Europe. The classification of the flower next occupied the lecturer's attention, and the system introduced by Mr. J. G. Baker in 1869 was explained and discussed. Naturally the Trumpet Daffodil and its sub-divisions were dealt with fully, and fine examples of *maximus* and some interesting specimens of minor and the tiny *minimus* were shown. The concluding portion of the paper was devoted to what may be termed the practical side of the subject. An interesting account was given of the production of bulbs in a typical Lincolnshire bulb farm, the bulbs from which, the lecturer said, were often, in his opinion, better grown and in a healthier condition than those from Holland. Some useful advice was given as to the culture and treatment of Daffodils, with particulars regarding their favourite haunts and soils. At the end of the paper an animated discussion ensued, and the meeting was brought to a conclusion by a vote of thanks to Mr. Notcutt.

Manchester Show.—Messrs. H. Low & Co. write: "We notice in your report of the above show that our firm has not been mentioned as exhibiting. We had a small but choice collection of Orchids, which gained a silver medal, and the plants as under received awards as stated: *Cattleya Trianæ* Empress of India and speciosissima *Lowiae*, first class certificates; *Cattleya Trianæ cœrulescens*, award of merit."

Primrose Day.—On Thursday last London was a city of Primroses, and rarely indeed have such immense numbers been seen on the streets. In every direction the modest flower was in evidence. London salesmen speak of hundreds of thousands of bunches coming in, and yet there were not too many. Let us hope that the gathering of the flowers was not accompanied by mutilation or the destruction of the plants, which have been practically exterminated in one or two districts by senseless hawkers dragging plants as well as flowers from the soil.—J. J.

Guernsey Growers' Year Book.—A copy of this publication, which, as well as being a concise directory of the Channel Islands, is the official organ of the Guernsey Gardeners' Association, has just reached us. As has been the case in the previous issues, the book embodies much practical matter, which cannot be other than of the greatest value to all growers for market in the Islands. To a lesser degree they will also be useful to home growers, but for these the chief value of the book will lie in the fact that it contains such an extensive list of names and addresses. The price of the book is 1s. 2d., post free, and it may be obtained from the secretary, Mr. R. Marshall, St. Julian's Pier, Guernsey.

Kew Guild Dinner.—The members of the Kew Guild will dine together at 7.30 on Tuesday, May 22nd, in the Holborn Restaurant, under the presidency of Sir William Thiselton Dyer, K.C.M.G., C.I.E., F.R.S. The president of the Guild, Mr. G. Nicholson, A.L.S.; the vice-president, Mr. W. Botting Hemsley, F.R.S.; and other officers have promised to be present. A very large gathering is anticipated. Old Kewites who have not already procured tickets, which are 5s. each, are requested to make early application to the honorary secretary of the dinner committee, Mr. C. H. Curtis, 68, Whitestile Road, Brentford.

Easter Floral Fete at Wolverhampton.—By a happy inspiration the committee of the Wolverhampton and Staffordshire Auxiliary of the Gardeners' Royal Benevolent Institution conceived the idea of holding a flower show and musical entertainment at the Drill Hall in aid of the institution. The fact that it was an impromptu affair partly explains why the local gardening fraternity was so sparsely represented, and Mr. J. F. Simpson, gardener to Alderman C. T. Mander, the Mount, Tettenhall Wood, was the only exhibitor. Of the local trade also, remarkable to relate, Mr. Richard Lowe alone contributed, his examples being three groups of plants, in one of which were included numerous cut specimens of Orchids. The show was further augmented by groups of miscellaneous flowering and foliage plants, generously contributed by Messrs. James Veitch & Sons, Chelsea. Messrs. Dickson, Ltd., Chester, and Messrs. Webb & Sons, Wordsley. In the latter firm's exhibit a very fine strain of *Cinerarias* in pots was noted.—W. G.

Cleaning Nursery Stock.—We learn from an American contemporary that a bill is being prepared by the Western New York Horticultural Society, and will soon be introduced in the legislature, for the protection of the great fruit growing interests of New York and the eastern States from the spread of the San Jose scale. It is an amendment to the present law for the inspection of nurseries and orchards, and will require the fumigation of all nursery stock with hydrocyanic acid gas before it is sold. This gas when properly applied is fatal to the scale, as well as to all other insects, such as the woolly aphis, Peach and Apple borer and bud moth, but is not injurious in any way to the trees or plants which are subjected to it. As the introduction of infected nursery stock into neighbourhoods where the scale does not exist is the great source of infection, and the only dangerous source, except from natural means of dissemination, it behoves fruit growers to take active measures for the prevention of the spread of this dangerous insect and for the eradication of it where it does exist. Fumigation is a simple operation, and the cost is nominal. Under the proposed law nurserymen and dealers can give a clean bill of health to their stock, and the result will be a greatly increased demand for New York grown stock. Some nurserymen oppose in this form the bill, but its object should be favoured by all, while the details of the bill should be such as to accomplish the desired effect with the least expense or bother to either producers or consumers of nursery stock.

The Agricultural Board.—The manning of the new Board of Agriculture for Ireland is not yet complete. The trouble lies in the selection of inspectors. As yet, Mr. J. S. Gordon, B.Sc., late principal of the Agricultural College at Holmes Chapel, Cheshire, has been the only one elected.

A Remarkable April Day.—In London, on Saturday last, the thermometer in the shade rose to a maximum of 78°, the reading being 21° above the average for April, and 6° above the average for the two warmest months in the year, July and August. The occurrence of such heat in April is very unusual, though not quite unprecedented. During the past thirty years there have been four warmer April days; one of these occurred on the 20th of the month, in 1893, when the thermometer rose to 82°, the other three in 1874, when a reading of 80° was recorded on the 21st, and a reading of 79° both on the 23rd and the 27th. In twenty out of the past thirty Aprils the thermometer never rose as high as 70°.

Mr. S. Arnott.—From the following announcement it will be gathered that our talented contributor, Mr. S. Arnott, is appreciated in other walks of life as well as in horticulture. A meeting of Parish Council was held in Kirkbean on Tuesday, April 17th. There were present: Mr. A. Lewis Ligertwood (Chairman); Mr. S. Arnott, Carsethorn; Mr. T. Campbell, Southernness; and Mr. J. G. M'Myn, Kirkhouse; with Mr. H. Fulton, clerk and inspector. Mr. Ligertwood tendered his resignation as Chairman on account of his leaving the parish, and also resigned his membership. On the motion of Mr. T. Campbell, seconded by Mr. J. G. M'Myn, Mr. S. Arnott was unanimously appointed Chairman of the Council. He thanked the members for the honour they had conferred upon him, and proposed that the Council express their regret at the resignation of Mr. Ligertwood and their sense of his past services. The motion was unanimously agreed to.

Kingly Gifts.—We learn from a contemporary that H.M. the King of the Belgians has, by deed of gift, on his sixty-fifth birthday, made over to the Belgian State those of his properties which contribute to the charm and beauty of the localities in which they are situated. "Anxious to preserve for these properties their purpose of adornment, I have made it my constant care that they should not be spoiled by any building which might change their character. It would be regrettable if their purpose should be destroyed, after my time, to the detriment of the beauty and salubrity of various populous localities. Being persuaded that it is fitting these properties should belong to the nation, I have resolved to offer them to Belgium, and I beg you to submit the deed of gift which I attach to this letter. Close to large towns, above all, it is highly expedient to preserve open spaces with their natural beauties in the interest of the picturesque and of hygiene, and it is particularly so when these spaces are adorned with plantations already large, and laid out in lawns and gardens bordering on the boulevards. It is the continuance of this arrangement of these open spaces, which have cost the public treasury nothing, that I desire to safeguard in the future. However modest may be the works of embellishment which I have carried out, it is of moment that they should not be lost to future generations." The properties comprise the noble domain of Laeken, close to Brussels; the marine residence at Ostend, and the château in the Ardennes.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
April.										
Sunday.. 15	W.S.W.	deg. 53.0	deg. 48.1	deg. 57.3	deg. 49.1	ins. —	deg. 48.9	deg. 46.5	deg. 45.1	deg. 45.4
Monday.. 16	W.S.W.	48.6	43.8	55.8	40.9	0.01	47.4	46.8	45.2	33.6
Tuesday 17	W.S.W.	46.8	43.7	52.3	38.3	0.02	46.8	46.6	45.5	27.5
Wed'sday 18	N.N.W.	52.2	46.8	62.6	36.2	—	46.5	46.5	45.7	27.9
Thursday 19	N.N.E.	56.2	48.6	65.2	43.5	—	46.2	46.9	45.9	34.9
Friday .. 20	E.S.E.	60.0	51.9	69.2	39.8	—	49.9	47.9	46.1	31.5
Saturday 21	E.S.E.	57.4	52.6	76.5	38.9	—	50.4	48.4	46.3	30.5
MEANS ..		53.5	47.9	62.7	41.0	Total 0.06	48.0	47.1	45.7	33.0

The weather during the first part of the week was dull and cold, with strong winds and frequent showers; the latter part was bright and very warm.



Phlox canadensis.

"FLOWER-GARDENER," on page 326, under the title of "Dwarf Phloxes," gives thoroughly deserved praise to a number of the best varieties in cultivation. It is to be hoped that your contributor's remarks may tend to popularise these beautiful plants, which do such a large share in adorning our rock gardens at various periods of the year. To those mentioned on the page quoted I would like to add *Phlox canadensis*, the beauty of which cannot be questioned for one moment. It is a dwarf-growing plant that produces a really surprisingly large number of flowers. The colour is one that is not particularly easy of description, and may perhaps be safely termed bluish lilac of a peculiarly shining hue. It thrives remarkably well in a pan, and becomes quite covered with its attractive flowers. In a mass in the rock garden, however, it is seen to the greatest advantage, and it is then admired by everyone who sees it. I have been told that it is then invariably satisfactory, and I should be glad to have the experience of other cultivators on this point.—F. R.

Planting Vines.

I HAVE read the remarks of "A. J., Moor Hall," page 310, on this subject, and think it will not be amiss if I give my views, derived from upwards of half a century's experience.

The Grape Vine starts naturally into growth in cool houses during April, and this is a good time for planting young canes. The borders for Vines generally may be partly within and partly outside, planting the Vines inside. For early forcing the borders are preferably inside, and internal borders only are best for Muscats. When the Vines are only required for producing summer Grapes the borders may be wholly outside. These are unquestionably the best for greenhouse Vines, as the rainfall, except in droughty periods, is ample for them. Extensive and expensive borders are altogether unnecessary where the natural soil is of a friable nature and well drained. Fertile garden soil will grow high quality Grapes, mixing with it some well decayed manure, and stirring to a depth of 2 feet. If the soil be rather heavy 2 lbs. of basic slag phosphate may be applied per square yard, and 4 ozs. of some approved mixture, such as Thomson's Vine manure.

In case of the natural soil being unsuitable, or a border has to be made, proper drains and outlets should be provided with 1 foot thickness of rubble about the size of half-bricks at the bottom and getting smaller to the size of road mettle at the top. It is best covered with a layer of old mortar rubbish, free from pieces of wood. Thirty inches depth of border is ample, and it need not be wider at the start than 6 feet. Good turfy loam taken from an old pasture where the soil is of a friable nature is the most suitable main ingredient for a Vine border. Of this a dozen barrowloads or cartloads, two of old mortar rubbish, one of wood ashes, and one of "nuts" charcoal, mixed together after chopping the turf into pieces forms a good compost, and should be placed in the border when moderately dry, and be made firm with the fork in preference to treading.

The Vines having been cut back in early winter, and kept in a cool house, will now have the buds grown to a length of a couple of inches. Turn them out of the pots, remove every particle of soil, preferably by washing with water at 110°, as this will disinfect them from phylloxera, if any, carefully preserving the fibres. Spread the roots out straight, covering them to the depth of 3 or 4 inches, working the soil well amongst them with the hand. Give a good supply of tepid water, and mulch with a little short, sweetened litter. If the canes have not been shortened it will not do to prune them now, but remove the growths from the upper portion down to where fresh shoots are desired to push, and cut away the disbudded part when the Vines have made some leaves, as there is then no danger of bleeding. Sprinkle the Vines and house twice a day, but avoid a very close and saturated atmosphere. Temperatures of 55° at night, 65° by day, and 70° to 75° with sun are suitable. If the weather be bright, and the panes of glass large, shade lightly from 9 A.M. to 2 P.M. If the temperature run up to 85° or more it will be an advantage. Where the Vines are planted outside the stems must be carefully wrapped with haybands, and the apertures in the wall be closed round them with elastic material.

When the Vines commence to grow give every encouragement, increasing the temperature to 60° to 65° at night, 70° to 75° by day, and 80° to 85° from sun heat. Young Vines of this year's raising may be turned out with the balls entire, or being in turves, which is the better plan, the soil should be well firmed about them so as to secure a fibrous root formation, and the house be kept at the temperature last named.—G. A.

Apple Norfolk Beefing.

BECAUSE this Apple is pronounced *biffin* in Norfolk, your correspondent "H. T. H." (page 329) thinks that name to be right and "Beefing" wrong. I am unable to agree with him or to accept Dr. Nuttall, who was not a pomologist, to Dr. Hogg who was, as the greater authority on the point. "H. T. H.," who has "known the Apple for over sixty years, has never heard it called Beefing by a Norfolk man." Neither have I, though I have only been acquainted with the Apple for about fifty-five years. It was not in Norfolk, and two Norfolk men in the garden always called the Apple *Biffin*, but as they called beef *bif* I did not regard them as authorities on orthoepy. Dr. Hogg distinctly states that the dried fruits are called *Biffins*, but explains that the name is derived from the similarity of the baked fruit to beef, and is "more correctly Beefing." The Dr., with whom I had a good deal of correspondence, was most careful in his nomenclature and spared no pains in his researches in the interests of accuracy. I did not, however, find any fault with the name "Biffin" as attached to dried fruits, when first referring to the subject; it is a good and well understood commercial term, but I drew attention to the inaccurate name "Beaфин," as applied to an English Apple in some catalogues, from which it had probably been copied by a correspondent, and gave him the proper name of the variety.—POMOLOGIST.

Judges and Judging.

As an official of a flower show, I have naturally read with interest the correspondence which has appeared on this important subject. While the societies which have plenty of funds, and can afford to pay for judges of the highest qualifications, would have little difficulty in securing new judges now and again, the smaller shows would not find it easy to make many changes. Good judges for small shows are not readily found, and officials are glad to know of suitable men who will come year after year, and whose decisions give satisfaction to reasonable competitors. I am aware that the view that there should be occasional changes is held by some of the judges themselves, but one usually finds that any change not due to the inability of the former judge to return is looked upon as a slight by some men of ability and high character. I daresay there would be some advantage now and again in making a change, but it would not always be for the better. There is a saying in Scotland which has a good deal in it, though expressed in a strange way. It is that "Ye'd better hae the deil ye ken than the deil ye dinna ken." It is sometimes better to put up with a few known evils than to run the risk of falling into worse. I think a good many others who have had experience similar to mine will be disposed to think it better to keep good men we know, while we can have them, than to get untried men in their places.—A SECRETARY.

The Gardeners' Royal Benevolent Institution.

"A. B." concludes his excellent leader, or pleader, if one may so term it, on page 300 by asking, "Who will not answer the call?" From the depths of my own experience and interest in the welfare of the Institution I venture to reply: The great majority of gardeners in the prime of life, the bulk of those a little beyond it, and with very few exceptions those who are farther on still, where, in "A. B.'s" happily expressed words—the hand trembles, and the eye becomes dim with the mist of years. These "will not answer the call." Why? may be asked. I do not know. In fact, does anyone know? For over a score of years it has been an enigma to me, and is likely to remain so to the end of the chapter. Did these men—good men and good gardeners we know they are—"answer the call," which has been so persistently shouted in their ears from the *Journal of Horticulture*, there would be no need for the special appeals made from time to time by those "above all pain, yet pitying all distress."

To many young head gardeners have I broached the matter. They would "think about it." To many an old head has the theme been diplomatically and delicately introduced. They, too, would "think about it." A fig for such thoughts which, like Turnip seeds kept too long, they hold in their bosoms until they are past sprouting into life. I now venture to sever the "not" from "A. B.'s" question and transform it to Who will answer the call? I look for an answer to this. I seek for it in the bothy, where the great future of gardening lies. In our boys of the bothy brigade is my hope, in them is my faith. They will answer the call, for not only is it the right thing to do, but theirs is the prerogative to do it at the right time. Perhaps it is a heavy call upon them and one would fain lighten it. Herein lays another question. Will not the executive of the G.R.B.I. meet them half-way by admitting them at a reduced fee on conditions that when filling the position of head gardeners they then become full subscribers? Surely this matter is worth its attention. Anyway, I sincerely believe that many of my dear young comrades of the craft will answer the call, and that they will not let the seed now sown lay in the cold soil of supreme indifference. Hurry up, then, boys, and still further increase the esteem in which you are held by—THE OLD BRIGADIER.

Notes on Gardenias.

THERE are few pure white flowers grown in our gardens and green-houses that receive a larger share of admiration than Gardenias, of which many thousands of blooms are yearly produced for the various markets. Unfortunately for producers for sale prices have depreciated during the past few years, and excellent flowers may frequently be bought from London flower sellers for 1d. each. This figure does not seem as though it would leave a very large margin of profit for the grower. It is not, however, proposed in these notes to deal with the plant from a market grower's point of view, but from the standpoint of the private gardener, to whom it frequently proves invaluable for various decorative purposes. But it is one of those flowers which, from the powerful fragrance they emit, have to be judiciously employed, as if too many are used in a warm room the scent, which in the open air would be termed delicious, becomes quite overpowering. It is not by any means unique in this respect, as such plants as Hyacinths and *Lilium auratum* are equally as troublesome to deal with, and one sometimes hears that the decorator is forbidden to use them at all. This is distinctly a matter for regret, as they are not easily replaced at certain periods of the year.

Gardenia flowers are, for one purpose at least, practically unrivalled, and that is for gentlemen's buttonhole bouquets. Not only have we a perfect flower, but also a particularly handsome type of foliage, so that no addition of foreign leafage is required whatever. Of course some gentlemen do not care for them, but generally speaking they are greatly appreciated, and we have not the slightest difficulty in utilising every bloom we can produce for this purpose and for use in wreath-making, for which they are invaluable. They have one very serious disadvantage, and it must always be kept in view when supplies have to be packed for transit by rail, and this is the liability to bruising. The very slightest rub almost invariably leads to the prompt appearance of a brown patch, which completely spoils the exquisite beauty of the flowers. Mishaps will occur at times, no matter how careful one may be in the packing, and it is very disappointing to have only half a dozen flowers spoiled. However, one is subject to this with practically all kinds of flowers to a greater or a lesser extent, and we must perforce do the best we can at all times and under all circumstances.

Fortunately the cultivation of the Gardenia does not present any formidable difficulties to the skilful plant grower, provided he has the requisite heat at command. They were not at one time regarded with a very favourable eye by gardeners owing to the partiality of the plant to become infested with insect pests, but now young stock is raised much more frequently than was formerly the case, and the trouble in this respect is thereby considerably minimised. True, the plants are attacked in many cases with equal frequency, but the practice of destroying the old plants has eased the grower's labour considerably, as they were by no means easy to get perfectly clean. When, however, young stock is mainly relied upon, and the methods of procedure are as good as circumstances will permit, there is not a great amount of trouble to contend with. So far as I have observed mealy bug and scale are the worst enemies to deal with, and the best preventive is undoubtedly excellent growth. Though plants may under exceptionally favourable conditions be had in flower over a considerable period, the natural flowering time is during March, April, and May, and at the present they are abundant. Most growers contrive to have blooms several weeks earlier than the date specified, and this can usually be done with comparative ease, but to much prolong the season, special conditions would have to be provided, and as a rule this is not possible, the majority of gardeners having their Gardenias in the stove in companionship with other customary occupants of that indispensable structure.

There are, I think, few plants that are easier to propagate than Gardenias, for cuttings can be rooted in small pots at practically any time of the year. In a compost of peat and sharp sand, the pots being plunged in cocoa-nut fibre refuse in a propagating case, roots are very quickly emitted, and good plants can soon be produced; in fact, I have known cuttings inserted in February as suggested to produce good flowers in the following spring. This express system is not always practicable, and August is usually found the most suitable month for propagation. Half-ripened shoots are then chosen, and these with the necessary attention to stopping and pinching will flower excellently in about eighteen months. The plants will not produce many flowers at one time, and they are somewhat fugitive;

but the succession will be continuous for several weeks, and the total number of blooms will be very large. As soon as the small pots are filled with roots the plants must be repotted, using a compost of loam, peat, and sand, and guarding most carefully against breaking any of the roots, which are decidedly tender. This fact must be borne in mind whenever the plants are repotted, as I have seen excellent stock almost ruined by carelessness in this work. The atmosphere of the house should be somewhat close at this stage, and the syringe may be advantageously used.

It will, of course, be essential to repot the plants as is necessary, always carrying out the operation before the plants become root-bound. They will eventually reach about 6-inch pots in the first year, and in these the plants will throw fine buds, which can be either removed or retained, according to personal requirements. The removal of the buds tends to improve the plant in habit and floriferousness, but they thus attain to a rather larger size than growers with limited space can comfortably provide. If they are finally placed in, say, 10-inch pots, they can be kept in the same receptacles year after year if desirable, but the difficulty of keeping them clean will present itself to the cultivator. When Gardenias are in good health and active growth they have a decided partiality for water, which must be abundantly supplied; this fact emphasises the necessity for perfect drainage prior to potting. Provide at the final potting, whether the plants are to be in 7-inch or 10-inch pots, a sound compost, preferably of fibrous loam and peat, with coarse sand for porosity, and a modicum of some approved fertiliser. Needless to say the latter must be judiciously employed, or more harm than good will be done. Liquid manure if used must be in a weak state, but as a matter of fact it is scarcely necessary at all if an excellent compost is provided.

There are several varieties in cultivation including *G. citriodora*, which is of dwarf habit and produces small flowers in the spring; *G. florida* and its varieties *Fortunei* and *intermedia*, and *G. radicans*. Of these *G. florida intermedia* (fig. 98) is decidedly the most popular, as being exceptionally free flowering and of an attractive habit of growth. The others named are comparatively seldom found in private gardens.—F. ROWE.

New Type of Pelargonium.

PROBABLY the sequel to the above heading will somewhat disappoint the expectant reader when it is explained that it refers to a type mentioned in the *Journal of Horticulture*, January 7th, 1875, by M. Jean Sisley, of Lyons. It was raised by M. Ch. Huber, florist of Nice, who was to send it out in the following March under the name of *Geranium pseudo-zonale*. Since then, however, so far as I am aware, no further mention in the horticultural press or otherwise has been made pertaining to it; but, according to the flattering description of its attributes, I have thought it would be interesting were it possible to obtain some further information regarding it.

M. Jean Sisley's interesting description of the type in question is worthy of repetition, especially from the hybridist's point of view, and I have given an abridged transcription. "Those who are occupied in hybridising know the hybrids of *P. hederæfolium* and *zonale* obtained in England by Wills and Peter Grieve by artificial fecundation. They also know that these hybrids seem to corroborate the theory of certain botanists, seeing that those that we know, and particularly *Willsi*, *Willsi rosea*, *Emperor*, and *Dolly Varden* are sterile; and that, which is much more to be regretted, is that they are superior to *P. peltatum* and *lateripes* by their great vigour and abundant blooming. The horticultural world will, therefore, learn with pleasure that a plant of this strain, which produces an abundance of seed, has been found in the environs of Nice, in a bed planted with *P. hederæfolium*, having lilac-white flowers, and *P. zonale* with red, white, rose, and buff. Apparently a good hybrid between the two species, but tending by its habit more to *hederæfolium* than *zonale*, as it is decumbent. Nevertheless, the foliage is more in the way of *zonale* than that of the hybrids obtained in England. The flowers are red, brilliant, and fifteen to twenty in a truss. The *zonale* has, therefore, exercised great influence in the fecundation. Which is the plant which has produced the seed whence this remarkable and curious plant has come? We do not know, and perhaps never shall know. By judicious crossing a new section in the numerous family of *Geraniaceæ* may be created."—G.

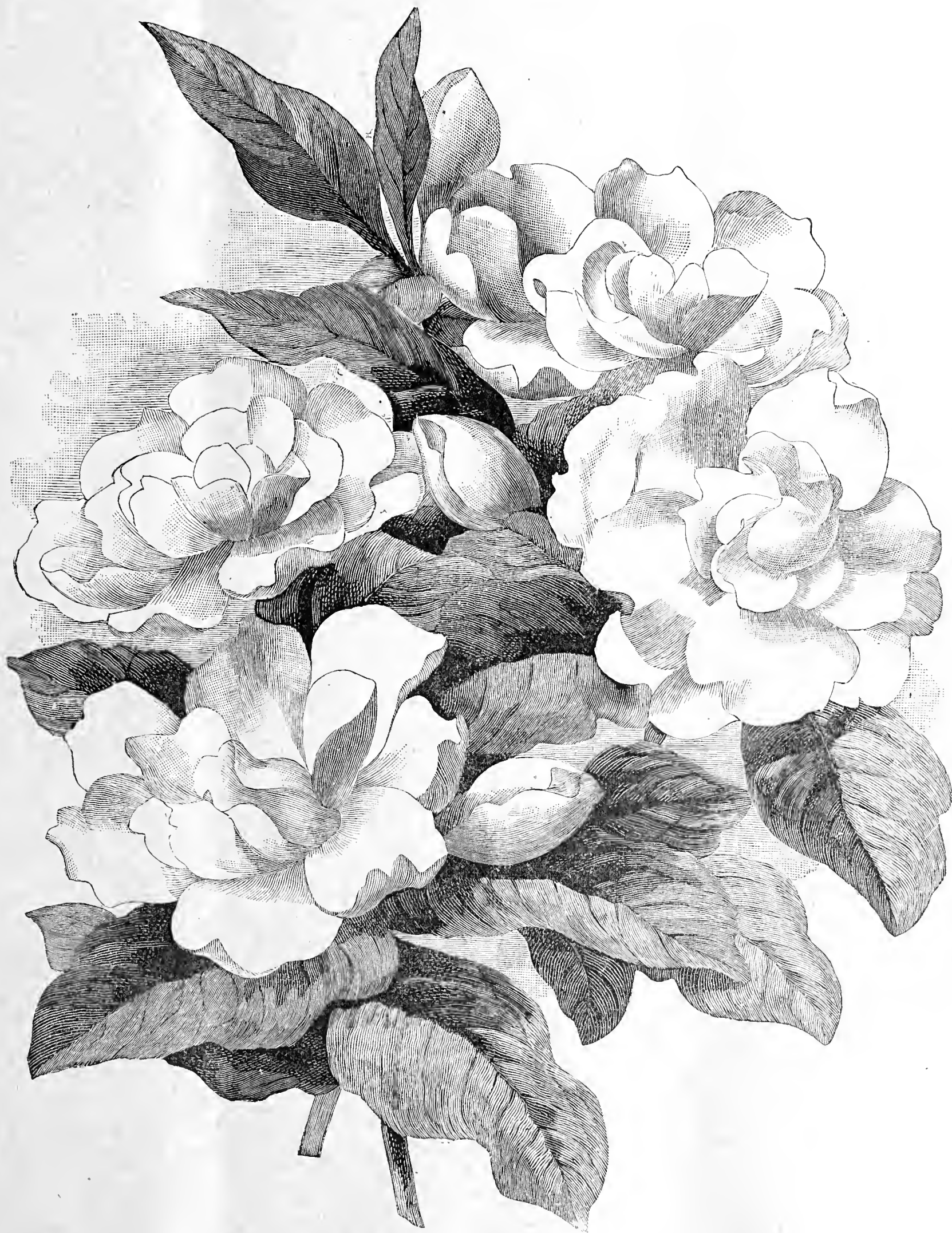


Fig. 98.—GARDENIA FLORIDA INTERMEDIA.



Rose Show Fixtures in 1900.

- June 13th (Wednesday).—York.†
 „ 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
 „ 28th (Thursday).—Canterbury and Colchester.
 „ 30th (Saturday).—Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), Gloucester, and Sutton.
 „ 4th (Wednesday).—Croydon, Farningham, Hereford, and Reigate.
 „ 5th (Thursday).—Bath and Norwich.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham.
 „ 12th (Thursday).—Brentwood, Eltham and Salterhebble.
 „ 14th (Saturday).—Manchester, and New Brighton.
 „ 18th (Wednesday).—Cardiff.*
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne.†

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Chemical Fertilisers for Roses.

PROFESSOR WM. STUART, of the Experiment Station, Lafayette, Ind., who has been conducting some exhaustive experiments, summarises the results as follows:—“There is every reason to believe from the results obtained in the several experiments enumerated, that chemical fertilisers when properly used may be made to serve every need of the Rose plant so far as food is concerned. The use of raw bonemeal in every instance gave an increased yield over that of the control plants, as well as giving a greater percentage of gain than did those receiving other forms of phosphoric acid. Pure bonemeal is not injurious to Rose plants, even when applied in amounts largely in excess of the requirements of the plant. The acidulated bonemeal which has been used by florists and supposed to be harmful, did not produce any noticeable injury, even when used in large amounts. As a rule, a combination of phosphoric acid and nitrate of soda gave better results than one of phosphoric and muriate of potash. Two or three applications of potash during the season was found to be preferable to a single application, although in some instances no injury from the single application was apparent. A larger number of *Perle Ros*s were produced from plants grown in a black than in a clay loam, while the *Kaiserin* gave reverse results. The sub watering method proved an efficient means of supplying the plants with moisture.”

Roses from Cuttings.

I HAVE read with much interest the notes by “R.” (page 336) on Tea Roses, especially the reference to raising stock from cuttings. As I have been very successful in this form of propagation I will give my methods as briefly as may be in the hope that they will prove of assistance to my brother growers. I should like to see even more interest taken in Roses than is the case at present, for though they are, so to speak, everybody’s flowers, one too frequently sees them in wretched health from attacks by green fly or faulty methods of cultivation. Roses are essentially plants that require good treatment, and if this is not afforded they will never be perfectly satisfactory. But to return to the cuttings.

That Roses from cuttings succeed admirably admits of no doubt whatever. A practically unlimited number of plants can soon be raised by this means at various times of the year when suitable cuttings can be secured. One of the periods when they are almost sure to root well is early in May, as after the forced plants have flowered and the wood has become partially ripened, two cuttings can be taken from each well grown shoot without injuring the plant in the least. Shoots cut so that two joints are above and one joint below the soil when inserted, are all that are necessary. Cut the bottom leaf off the cuttings and place about five cuttings in one 3½-inch pot,

pressing the soil firmly. The most suitable compost consists of two parts of good loam to one of leaf mould, with a free admixture of sharp sand, placing some of the latter on the surface to be carried down to the bottom of the hole made to receive the cutting, as roots are more quickly formed in sand than in soil. If the soil in the pots is watered prior to the insertion of the cuttings the work can be done much more firmly, and the cuttings stand a far better chance of rooting than they do in a loose dry soil. In either case water should be applied to settle all properly down.

Place the pots in a gentle bottom heat in either a hotbed or a propagating frame, whence the cuttings can be kept close except for the admission of air occasionally for the evaporation of condensed moisture. On no account must the foliage be allowed to flag, therefore shade when necessary, and occasionally sprinkle the leaves with water. Roots will quickly form, when the plants must be removed to a warm house for a time, giving them a position near the glass to prevent their being drawn during the growth. Place them singly into small pots, using a similar kind of soil, returning them to their former quarters until established, when the plants should be gradually hardened, and either placed out into their permanent positions or be kept in pots for the remainder of the season. If the latter system is to be adopted a shift into 4½-inch pots will be an advantage, using soil with more loam and some partly decayed manure, plunging the pots in ashes for the remainder of the year.—GROWER.

Scarlet Runner Beans.

It is seldom of any use to sow seed of Beans before the end of April or the beginning of May. Even if the weather is genial and warm earlier than the dates named there is no guarantee that it will remain so throughout the month of May. Frosts during the middle of the month are always likely to occur, and Beans are even tenderer than Potatoes, and less able to recover from injury caused by frost; besides, should the growths recover, a check has been given the plants, and time has been lost. There is the same liability to frost in the south as in the north, though of course there are favoured places where May frosts do not trouble, and Beans may be sown earlier with prospects of obtaining a crop in advance. Cultivators who can afford space may try a row or two of early sown Beans, but not depending upon them for the main crop, which should be sown at the usual period early in May.

The best way of insuring an early crop of Runner Beans is to sow seed in boxes at the same time as sowing outdoors. These seeds will soon germinate under glass, but the growth must not be allowed to become drawn by staying too long in a warm structure. Immediately the leaves are forming place the box in a cool structure or in a frame where the growth will develop sturdily. The planting out may be done as soon as safety from frost is insured. Previous to planting the ground should be well prepared and the sticks inserted, placing one plant to each. Water in the plants and give one tie to each, so that the tendrils will soon seize hold of the stakes. Should the weather be hot and dry mulch over the roots with short manure.

The soil for Beans ought to be light, rich, well broken up, manured, and not of a wet character. It should not be deficient in lime or potash, and if there is any doubt on that score fork into the ground a dressing of lime, one bushel per rod, and sprinkle a liberal quantity of wood ashes along the rows and in the drills previous to sowing. This supplies potash. Ground that requires some additional enriching may, before sowing, be dressed with a mixture of artificial manure, consisting of 1½ lb. of salt, ¾ lb. of nitrate of soda, ¾ lb. of superphosphate, and ½ lb. of kainit. Apply this quantity to a square rod of ground.

Beans should be sown in double rows, 9 inches between the two rows. Place the seed 4 inches apart, 2 or 3 inches deep. The stakes may be fixed as soon as the plants begin to put forth their tendrils, a line of long, straight, smooth stakes to each row, tying them together near the top with a horizontal stake or rod. After this no further trouble should be taken except to afford water, mulching, and liquid manure as the flowers appear and pods form. Moisture at the roots at that period is very essential, as the flowers are likely to drop if the growth is not well supported. Copious supplies of water should be continued throughout the bearing season, especially if the weather is hot and dry. Beans, however, abstract a large amount of moisture from the soil, and making good the deficiency is a necessity even in the dampest weather when the crop is growing in very light dry soil.

To prolong the supply of Beans it is important that the pods be gathered as soon as ready. This will prevent the maturation of seed, which is an exhausting process.—E. BARROW.



The Sleep of Plants.—The "sleep" of plants is by no means analogous even to that of animals. It is a popular name given to the phenomena of sensitiveness to light, humidity and heat. When leaves go to sleep, they reduce sail to meet conditions, they expose as little as possible of their surface to radiation. With flowers sleep or closing usually has reference to pollen protection.

Narcissus Sir Watkin.—Seldom have the flowers of this splendid variety been better than this year. We have a considerable number planted in various positions, and, without an exception, the bulbs have produced flowers large in size, of fine substance, and wonderfully rich in colour. It cannot be regarded other than as one of the most valuable Narcissus in cultivation. It differs from some others of the incomparable section in the boldly striking manner in which the flowers look up at one from above the broad green leafage. Like the majority of Narcissus it is simply invaluable for cutting, especially if the blooms are taken before expansion, and this means they will last for a very considerable period if fresh water is provided daily.—F. R.

Lettuce Stanstead Park.—For winter or rather spring supplies this is a good variety, and one better adapted for autumn than summer sowing. This was pointed out to me recently by a neighbouring gardener, and while in his case the varieties had been sown and planted last autumn, only this one remains, the others—Bath Cos and Moor Park—succumbing almost to a plant to the wintry weather experienced. These results are somewhat at variance with my own experience, Bath Cos and Hardy Hammersmith coming out of their trials better than could have been expected. Hicks' Hardy White, usually a reliable variety, did not do so well, thus showing that the results obtained in one season are not always guaranteed for the next, and proving, too, the mistake of depending entirely on one variety.—S.

Violet Marie Louise.—Having heard of the success of Mr. E. Stubbs, gardener to Mrs. Hudson, Bache Hall, Chester, with Marie Louise Violets, I took the opportunity of paying a visit to this establishment in the early days of April. Although this is the first attempt that has been made with Violets here, the success attained has been all that could be desired. In six ordinary frames, each containing about two dozen clumps, there has been continuous cutting since the end of September, with the exception of about a fortnight's severe weather in January. The clumps, I learned, were planted early in September in ordinary compost, and with the exception of a little weak liquid manure applied in March, they have not had anything "strengthening" since they were put out. At the time of my visit I quite expected to see small flowers with short stalks, but instead the blooms were large, well developed, and with stalks averaging quite 6 inches in length. The value of these deliciously scented flowers during the winter months must be inestimable, and the culture appears to be so simple that no well-equipped garden need be without them.—GEORGE PAXTON.

Prunus Davidiana.—This is a very pretty early flowering species from China, and a near ally of the common Almond, though differing somewhat in the size and colour of its flowers. It forms a small tree about 20 feet high, of a rather slender, upright habit, and very quickly makes a handsome specimen if planted in good soil. Although not largely grown in this country, it is rapidly coming into favour on the continent, from its freedom of growth, earliness, and hardiness. While the opened flowers are injured by hard frosts, the buds do not suffer if not too advanced, as this year has abundantly shown, the time of flowering being usually the last two weeks of February; but this year it has been quite a fortnight later, and the buds were not injured in the least by the previous severe weather. It can be obtained in two colours—white and deep pink—under the names of var. alba and var. rubra, either of which is highly ornamental. If a few plants of each are placed together in a position facing south with a background of evergreens, a splendid effect can be obtained at very little cost, and with little trouble in keeping right afterwards. The flowers are somewhat smaller in size than those of the Almond, but are produced quite as freely. It can be easily propagated by budding or grafting on the common Almond.—C.

Rapid Vegetation.—Never probably has the leafing and blossoming of trees been more rapid than during the past ten days. Fruit trees have become wreathed with blossom by the magic of sunshine, after the prolonged dull weather and cold winds. In the suburbs of London many trees have changed from the swelling of buds on Bank Holiday into full leaf now. Some Horse Chestnuts made growths over 6 inches long in as many days.

Colour of Daffodils.—Where marked differences were noted in the colour of Daffodils analyses were made of the different soils in which they grew. It was found that the intensity of the colour increased with the percentage of organic matter, phosphoric acid, lime and peroxide of iron. It was not, however, determined, says an American contemporary, whether all the increase of colour was due to the presence of large amounts of these compounds or only a part of them.

Planting Osiers.—Though in many parts of the country Osiers are planted principally in November, the cuttings or slips from which they are propagated also admit, says the "Farmers' Gazette," of being put in during the current month. The positions best adapted for Osier beds are low lying lands situated by the sides of rivers or running waters, and if these lands are subject to being occasionally submerged by an overflow of a stream, or to be otherwise irrigated, so much the better. In preparation for the reception of the cuttings the land should be deeply trenched, and divided into beds 8 or 10 feet wide; between these beds there ought to be shallow open drains. The cuttings for planting should be from 12 to 18 inches in length, and taken from branches of two or three years' growth. These should be planted in lines 2 feet apart, and covered with 5 or 6 inches of earth.

At the Flower Market.—The flower market at Covent Garden and the shops in the central avenue, better known as "the grand row," were exceptionally busy from an early hour on Monday morning arranging and despatching enormous quantities of red and white Roses for display in connection with the celebration of St. George's Day. Large as was the supply the demand was even greater, English grown red Roses fetching wholesale from 4s. to 6s. per dozen blooms, while white Roses realised 2s. 6d. and upwards per dozen. In view of the national character of the celebration many of the leading merchants were selling no flowers which they cannot guarantee to have been grown in England—of course under glass—but in addition to this very large quantities have been received in the market from France, the Channel and the Scilly Islands, and the price of these flowers ranged from 1s. 6d. to 3s. per dozen. Numbers of ladies visited the flower market at a very early hour to make their own purchases, and the streets around Covent Garden were enlivened by parties carrying enormous bouquets of choice red and white blooms. Quantities of artificial Roses are also being hawked about the streets, and command a ready sale, the imitation being excellent.—("Westminster Gazette.")

Cape Fruit and Hailstones.—A resident in the Colony has sent us a copy of the "Cape Argus" of March 8th, from which the following extract is taken:—"It is greatly to be feared that the fruit export trade will come far short of expectations this season. This is unfortunate, for the exportation of Apples was beginning to assume fair proportions, and so many young orchards are coming into bearing that a steady annual increase of our output was confidently anticipated. The reason why so few Apples are likely to be exported this season is chiefly on account of severe hailstorms occurring just after the fruit had set. In some instances the trees were actually killed by the hail, while in most cases they were seriously damaged and the bulk of the fruit knocked off. Orchardists have, perhaps, more to contend against than the followers of any other rural industry. The insect and fungoid pests that attack their trees and fruit are legion, while their crops are, to a large extent, dependent on the weather. Even where provision has been made for irrigation, and a large number of orchardists do this, a single hailstorm may wreck the prospects of a whole season, besides injuring the trees to such an extent that it may take them two years to recover. Against a visitation of this kind no precautions can be taken, but the careful fruit grower is now able to deal thoroughly with most orchard pests. Times may come in future when orchardists will suffer severely on account of unfavourable weather, but none of our industries established in connection with the land have brighter prospects than Apple growing. There is an unlimited market in England for all the Apples we can produce, and an Apple orchard in full bearing is a most prolific and profitable property to possess."

Ranunculuses.

THE Ranunculus is one of our most beautiful old-fashioned flowers, yet it is seldom seen, though very useful for cutting, being both a good traveller and lasting several days in fine condition. If cut whilst the buds are young or about a third expanded they will continue to unfold the same as if growing on the plant. A bed of the old florists' varieties is a sight to be remembered. Many persons, no doubt, are under the impression that the Ranunculus is rather fastidious. They want attention, I admit, but they only require ordinary treatment if the mould is suitable. Sandy clayey loam is the best soil, similar to that in which the common Buttercup grows freely, and if this flower flourishes in the district it may be taken for granted that the Ranunculus will thrive too if the following details are carried out.

Whilst growing the Ranunculus requires an ample supply of moisture, but it will not thrive in a close sodden soil. The position for the bed should not be in a high and dry place, or where the soil is not drained and in a well pulverised condition. The site of the bed having been marked out stir the soil deeply, and if it is poor I would sooner add some fresh loam than use manure; but if it is decided to use the latter, in the autumn cow manure should be dug in, not being nearer to the surface than 6 inches. The most suitable period for planting is any time after the middle of February, when the weather is favourable and the soil in a workable condition, and I should prefer to wait a week rather than plant when the ground is in a wet state.

When planting some people draw drills about 1½ inch in depth; but what we have found the quickest and best way is to make the surface of the bed level, placing an edging of thin-boards around the bed, the top edge of the board to be 1½ inch above the level. Instead of drawing drills press the tubers on the surface in rows 3 inches apart and 4 inches between the rows, covering each with a pinch of sand, which will cause them to turn out clean when the time arrives for lifting. When the tubers are all laid out the soil should be placed carefully over the tubers to the top edge of the boards, and levelled off firmly with the back of a small rake. If those growers who have hitherto planted Ranunculus in drills were to adopt this plan they would not regret it, and the tubers would all be of an uniform depth.

There is one point in the preparation of the tubers before planting that needs attention, and that is to soak them in water for about twenty-four hours. When this is not done the tubers are apt to force themselves upwards too near the surface, and often out of the ground altogether, which weakens them considerably, and if not detected at once they perish, this being the cause of many failures. Another cause of failure is through the tubers not being harvested carefully, or they are stored in a damp place. A blue mould or mildew will often appear amongst them, which, if not promptly observed, will soon cause serious havoc. If this should appear the tubers should be picked out at once and the remainder laid out thinly in a dry place.

As the young foliage appears above the ground all weeds should be removed, and on the first dry day loosen the surface of the bed with a small stick or fork, and press the soil lightly about the roots. All the treatment they require is to keep them free from weeds and to give them a thorough watering occasionally if the weather prove dry. A slight mulching with well pulverised manure would also prove beneficial and would lessen the want of water, keeping the roots cool. When the blooms commence showing colour take care that no water touches them, as the construction of the flower causes them to hold water, and if the sun happens to shine powerfully, the blooms would most likely be injured unless shading could be provided. As the blooms fade they must be removed, or the tubers may be weakened, and as soon as the foliage turns yellow and withers lift the tubers, clear them of soil and old foliage, and lay them out to dry in the open air out of the reach of sun, or, what may be better, in an airy shed. When perfectly dry store them away. If the tubers are left in the ground after the foliage decays they are apt to commence making fresh growth or roots, which weakens them considerably.

Though as florists' flowers strictly Ranunculuses have fallen upon evil days, many thousands are yearly planted in various gardens in

the country. As a rule growers select between the French, Persian, and Turban (fig. 99) types, each of which possesses some desirable attribute of form or colour that renders it worthy of inclusion in the garden.—A.

Electric Light and Liliun Harrisii.

THE florist will doubtless be interested to learn the results of recent experiments conducted by the writer with the electric arc light upon the growth and flowering of Liliun Harrisii. The bulbs, mostly five to seven, were potted in mid-October, removed to cold frames in late November, plunged in the solid bed in the greenhouse late in December, and the electric light started on the 1st of January. Up to this time the cultural conditions had been kept as uniform as possible, and the plants were divided up as evenly as could be judging from the development of the tops. At five o'clock in the afternoon the light, a globeless arc lamp, was started, and at six in the morning it was stopped. The bed was divided into three sections—one exposed to the full effect of the rays from the light, another still in the light but behind a pane of glass which cut out some of the ultra-violet rays, otherwise being the same as the first section; the third section was kept dark by means of an opaque curtain drawn across the house each evening when the light was turned on.

At the time the light was turned on the plants were very uniform in each section, care having been taken to divide up the less uniform ones among the different sections. In about six weeks differences commenced to appear, which became more pronounced as the experiment progressed. In the lighted sections the plants became leggy, the leaves very much curved, narrower than customary; a sallow green and far apart on the stems. Under the naked light these points were most noticeable. The plants in the darkened section were more stocky and robust, had a more pleasing appearance, better green colour, and seemed healthier and more evenly developed. After the formation of the blossom buds these differences seemed to increase less noticeably, but the buds on the plants in the naked light section began to develop an ugly brown streak or band from base to point upon the surface exposed to the light directly, generally the upper surface. This was of the nature of a burn, and grew worse as flowering time drew near. The petals so afflicted were much curved, more than is usual with healthy blossoms. In some cases the stripes were a full quarter of an inch wide. In the second section, where the light had first passed through a pane of glass, no such effects were observed, and, of course, none in the darkened part of the house.

The effect upon the time of blossoming was also marked. The first flowers opened in the naked light, four days earlier than the earliest blooms in the second section, and thirteen days earlier than flowers in the darkened section. They lasted, upon the average, nine days, those in the second section nine and half days, in the third or darkened one eleven days. These last, though later, were more robust, but somewhat smaller than the others, which, like the plants that bore them, were spindling, but, with the exception of the burned ones, not unsightly.

Fortunately for the experiment a plant with two remarkably evenly developed stems was found. This was placed so that the curtain could be drawn between the stems, thus shutting off the light from one of them. The other stem was in the second section under the light that came through the pane of glass. Another twin-stemmed plant, almost as well developed as the one mentioned, was placed in the naked light section, and the larger of the stems covered each night with a large Manila paper tube to keep it in the dark. In each of these cases the stem in the dark developed its flower a day later than the stem in the light.

Other plants of uniform development were selected from time to time, marked and placed in the different sections, with the results that those in the lighted sections were first to blossom, and that the plants under the naked light showed to a more or less degree the brown burn referred to above. Plants that were selected for this part of the experiment were carrying well-developed buds when removed to the lighted section. The ones under the strained light lasted as long—namely, eleven days, and were as well formed as the flowers grown in the dark; moreover, they were from one to three days earlier.

From these experiments, which have not been conducted for a long enough period to warrant definite conclusions, it is advised that the use of the arc light, in bringing Easter Lilies into blossom, should be attempted upon only a small scale commercially until more fully investigated. From the above work it seems likely that the light might be used to advantage after the buds are an inch long, in order to make them expand sooner than they naturally would, but the light should always pass through a glass globe before reaching the plants. Probably an opalescent glass would be better than the one used in these experiments; this, however, has not been determined.—M. G. KAINS (in the "Florists' Exchange.")



Fig. 99.—TURBAN RANUNCULUSES.

The Royal Horticultural Society.

Drill Hall, April 24th.

SELDOM has the incapacity of the Drill Hall been better exemplified than was the case on Tuesday. Every corner of the hall was packed with products in such a manner as to prevent the possibility of anyone properly appreciating the beauties of the exhibits. This was to a certain extent accounted for by the presence of the National Primula and Auricula Society, a report of whose show will be found on another page, but the fact remains that the accommodation of the Drill Hall is insufficient for the splendid shows of to-day. The Fruit Committee was not pressed, there being only four exhibits, including magnificent Lemons from Kew, Winter Orange Pears from Mr. Notcutt, and Cucumbers from Mr. Markham of Wrotham Park.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. H. Laing, H. B. May, G. Reuthe, G. Nicholson, J. H. Pitt, E. Molyneux, J. F. McLeod, C. R. Fielder, H. S. Leonard, J. Fraser, J. D. Pawle, H. J. Cutbush, R. W. Ker, G. Gordon, C. Jeffries, T. W. Sanders, E. H. Jenkins, C. E. Shea, E. T. Cook, J. W. Barr, G. Paul, C. Blick, H. J. Jones, J. Hudson, J. Jennings, W. Howe, and H. Turner.

Mr. R. Brown, gardener to Sir F. Tress Barry, Bart., St. Leonard's Hill, Windsor, exhibited a collection of fifty varieties of Camellias from plants grown out of doors. The flowers were of exceptional excellence, while the foliage was of splendid substance. Such an exhibit as this should do much to popularise those handsome plants for outdoor culture. Messrs. H. Cannell & Sons, Swanley, contributed a display of Begonias, amongst which were Gloire de Montet, Boule de Neige, Triomphe de Lorraine, all semi-doubles, and the brilliant Count Zepplin. Veronica Hulkeana and Primula obconica were also staged. Mr. G. W. Piper, Uckfield, sent a number of blooms of the beautiful Rose Sunrise, which is rapidly becoming so popular.

A large bank of Cineraria polyantha (cruenta hybrids) was arranged by Messrs. J. Veitch & Sons, Ltd., Chelsea. The plants carried splendid foliage and graceful heads of variously coloured flowers. This type of Cinerarias produces excellent material for cutting. Messrs. R. & G. Cutbush, Southgate, were represented by a group of Azaleas, mainly comprising varieties of the Ghent section. Many of them were of great beauty, and strikingly floriferous. A most handsome exhibit of Cinerarias was sent by Messrs J. Carter & Co., High Holborn. The singles indicated an excellent strain, not too dwarf, and carrying handsomely coloured and formed flowers in abundance. The double varieties also were good.

A most attractive group was that comprising pot Roses from Messrs. F. Cant & Co., Colchester. Needless to say the plants were excellently grown and carried flowers of fine substance. Many of the most popular varieties were represented. Messrs. J. Peed & Son, Norwood, arranged a group of Lilacs, Staphylea colchica, Azaleas, Clivias, Ribes, Laburnums, and others, the whole being tastefully displayed. Mr. D. Kemp, gardener to W. Bryant, Esq., Stoke Park, Slough, sent a number of Amaryllises, magnificent plants in large pots, carrying large numbers of spikes of finely formed flowers.

Roses in pots, trained in various forms, were arranged by Messrs. Paul & Son, Old Nurseries, Cheshunt. The plants of Psyche were superb, as were the many other varieties represented. A few hardy plants were also employed as an edging. Plants of Gillenia trifoliata (fig. 100) were most charming. Mr. J. Russell, Richmond, contributed a collection of Japanese Maples, but the position assigned to them was not favourable to showing their beauty. Mr. H. B. May, Upper Edmonton, had an artistic arrangement of splendidly grown plants of Crimson Rambler Roses, Hydrangeas, Caladiums, Spiraeas, with Clematis Nellie Moser and Marcel Moser, and Ferns.

Messrs. J. Laing & Co., Forest Hill, contributed a collection of flowering and foliage plants, including Ericas, Clivias, Begonias, Crotons, Dracenas, Palms, and others, all in good condition. The same firm sent also a semicircular group of Azaleas, Crimson Rambler Roses, Lilacs, Acers, Roses, and Clematis. Messrs. J. Veitch & Sons exhibited Lilacs, with Magnolias obovata Lenne, conspicua Norberti, Soulangiana, and stellata. Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, sent some magnificent Roses, including Maréchal Niel, Niphetos, L'Idéal, and others. From the Royal Gardens, Kew, came Cineraria Lady Thiselton Dyer, a hybrid from C. Heritieri, and a blue garden form. It is a graceful and attractive plant.

Mr. W. J. Godfrey, Exmouth, showed Pelargonium Emannel Lias, a pretty rose and white variety. Messrs. R. Wallace & Co., Colchester, staged Muscaris, Irises, Fritillarias, and Erythroniums in variety. Messrs. W. Cutbush & Son, Highgate, were represented by Azaleas, Gueldres Roses, Staphylea colchica, Lilacs, Calla Elliottiana, and Palms. Mr. J. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury, staged a dozen varieties of Cape Pelargoniums, all carrying flowers of great excellence. Messrs. Barr & Sons, Covent Garden, sent a number of Japanese dwarfed trees.

Irish grown Tulips, from Messrs. Hogg & Robertson, Dublin, made a really brilliant display, and was immensely admired. All the popular varieties were represented by flowers of exceptional excellence. Messrs. J. Veitch & Sons sent a small group of Hydrangea hortensis rosea.

ORCHID COMMITTEE.—Present: H. Little, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, J. Colman, T. Rochford, W. Cobb,

J. Douglas, H. T. Pitt, H. A. Tracy, E. Hill, J. W. Potter, F. J. Thorne, W. H. White, T. W. Bond, W. H. Young, H. J. Chapman, and J. Jaques.

Messrs. H. Low & Co., Bush Hill Park, arranged a handsome group of Orchids. Cattleyas were particularly prominent, while Odontoglossums were also excellent. Phalaenopsis Lady Rothschild is an attractive form, that was much admired. Mr. W. Whitlock, gardener to W. A. Bilney, Esq., Weybridge, staged some superb Dendrobiums, that made a bright show. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent Dendrobium macrostachya, D. teretifolium, Cirrhopetalum fimbriatum, and Cattleya Schrödera. Messrs. J. Veitch & Sons staged Dendrobium Sosius, Lælio-Cattleya Wellsiana, Cypripedium Jocasta, and Zygocolax alba.

Mr. Robbins, gardener to W. Vanner, Esq., Chislehurst, sent Cypripedium William Vanner, while Sir J. Miller, Duns, N.B., showed Lælio-Cattleya Lady Miller. Mr. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, exhibited a miscellaneous group of Orchids, including representatives of many of those now in flower. Mr. W. H. Young,

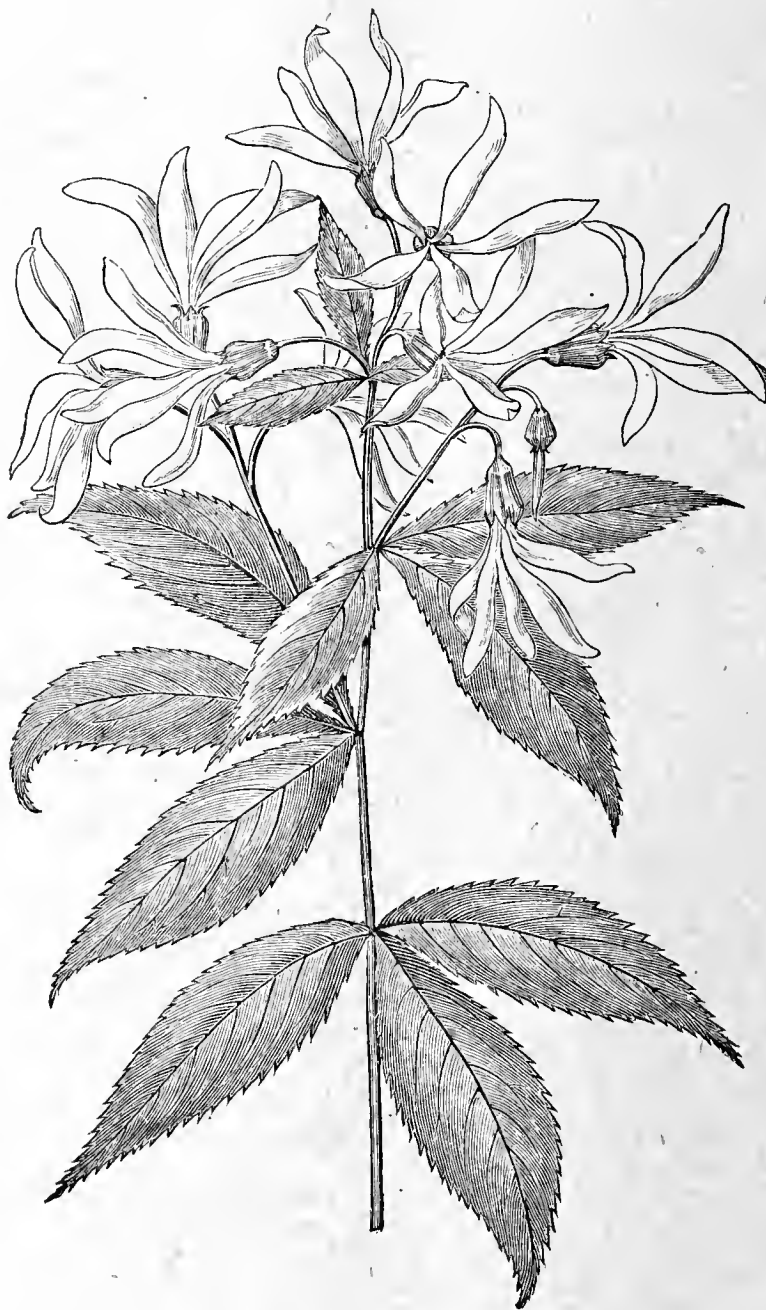


FIG. 100.—GILLENIA TRIFOLIATA.

Orchid grower to Sir F. Wigan, Bart., Clare Lawn, East Sheen, contributed Cattleya Mendeli, C. Schrödera, C. Schilleriana, C. intermedia superba, Lælia Jongheana, L. Latoua, a superb white Cattleya intermedia, and a few others. Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, Staffs, exhibited some Odontoglossums of exceptional excellence, two of which were specially honoured and are referred to below. There were several other growers who contributed small exhibits, including Messrs. de Barri Crawshay, N. C. Cookson, and J. Colman.

NARCISSUS COMMITTEE.—Present: J. T. Bennett Poë, Esq. (in the chair); with Messrs. C. Macmichael, G. T. Titheradge, R. Sydenham, J. Boscawen, A. Kingsmill, W. Poupart, P. R. Barr, W. Ware, J. Walker, G. H. Engleheart, S. A. de Graaff, J. Pope, W. Goldring, C. Scrase Dickens, S. Eugene Bourne, and Miss Willmott.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, staged a table of Narcissi arranged with Palms, and a front of Isolepis and Panicum. The chief varieties were Empress, Emperor, Sulphur Phoenix, Victoria, Apricot, Samson, Gloria Mundi, and W. P. Milner. Messrs. Jas. Veitch and Sons, Ltd., Chelsea, arranged a large table of Narcissi with Adiantums and Pterises in relief, making a pleasant groundwork. The collection included most of the well known forms, the chief were

Madame de Graaff, Mrs. Thomson, Mrs. W. T. Ware, Silver Trumpet, Glory of Leiden in fine form, Victoria, Cernuus, Duchess of Westminster, Madame Plempe, and Chelsea Gem.

Messrs. R. H. Bath, Ltd., Wisbech, also had a grand table of Narcissi tastefully arranged with their own foliage. The collection was beautifully clean throughout, and the blooms remarkably fresh. The most noteworthy forms were Victoria, Barri conspicuus, Wm. Goldring, Horsefieldi, Madame de Graaff, Madame Plempe in splendid form, as was also the Glory of Leiden, Weardale Perfection, Flora Wilson, and the Hon. Mrs. Barton. Messrs. M. Van Waveren & Son, Hillegom, sent a collection of Daffodils that included some remarkably fine forms. The premier variety was named Van Waveren's Giant, a magnificent Daffodil, by far the largest yet seen; other notable forms were Longfellow, Shakespeare, Surprise, Windsor Castle, Alaska, Olympia, and Aurora.

A pretty and attractive collection of hybrid and seedling Narcissi was staged by the Rev. G. H. Engleheart, Appleshaw, Andover. The chief varieties were Sol, Ariadne, Lillian, Flambeau, Landor, Virgil, a lovely form of Poeticus, Diana, Hector, Chancellor, and White Queen. Messrs. Barr & Sons, Covent Garden, arranged an extensive display of Narcissi in all sections. The chief varieties were Queen of Spain, Chaucer, General Roberts, a grand form; Weardale Perfection, Constance, Cernuus, Catherine Spurrell, Matron Vincent, Madame de Graaff, and Wm. Goldring. Messrs. G. Jackman & Co., Woking, Surrey, contributed a display of hardy flowers, of which Narcissi formed the backbone. The exhibit was a particularly attractive one, and it was unfortunate that it was in an inconspicuous position.

AWARDS.—*Floral Committee.*—Silver-gilt Flora medals to Messrs. H. B. May and Paul & Son; silver Flora medals to Messrs. W. Rumsey and F. Cant & Co.; silver Banksian medals to Messrs. J. Laing & Sons, J. Veitch & Sons, J. Carter & Co., Hogg & Robertson, R. Brown, W. Kemp, J. Russell; bronze Flora medal to Messrs. W. Cutbush & Son; and bronze Banksian medals to J. Peed & Son and G. Jackman & Co. *Orchid Committee.*—Silver Flora medals to Messrs. W. A. Bilney, H. T. Pitt, and W. H. Young; and silver Banksian medal to Messrs. H. Low and Co. *Narcissus Committee.*—Silver Flora medal to Messrs. R. H. Bath, Ltd.; and silver Banksian medals to Messrs. H. J. Jones, Barr and Sons, and J. Veitch & Sons.

Certificates and Awards of Merit.

Auricula Celtic Ring (Barr & Sons).—An Alpine of good form and substance; the colour is sulphur yellow (award of merit).

Arabis albida plena (R. Wallace & Co., A. Perry, and Paul & Son).—This is a double form of the well-known border plant (award of merit).

Canna Secrétaire Chabonne (Cannell & Sons).—A handsome form with rich orange coloured flowers (award of merit).

Cattleya Schilleriana Pitt's variety (H. T. Pitt).—The lip and throat of this are superb; the colour is very deep crimson. The sepals and petals are very dark (first-class certificate).

Dendrobium Wardianum Fir Grange variety (W. A. Bilney).—A superb variety of the well known type (award of merit).

Mertensia virginica rubra (A. Perry).—A soft rose coloured form of a comparatively well known plant (award of merit).

Narcissus Van Waveren's Giant (M. Van Waveren & Co.).—This is a superb large trumpet variety upwards of 5 in. across. The perianth segments are pale yellow and the trumpet rich yellow (first-class certificate).

Narcissus Olympia (Van Waveren & Son).—This, too, is a magnificent variety. The broad spreading trumpet is rich yellow and the segments paler (award of merit).

Narcissus Wilhelmina (J. de Groot & Son).—A splendid bicolor. The immense trumpet is rich yellow, and the perianth segments creamy white (award of merit).

Narcissus Charles Wolley Dod (Miss Willmott).—This may be described as Sir Watkin with white perianth segments and a bright yellow finchriated cup (award of merit).

Narcissus Countess Grey (Miss Willmott).—A beautiful bicolor with a pale yellow trumpet (first-class certificate).

Narcissus Mrs. Berkeley (Miss Willmott).—A very pale Sir Watkin. The cup is cream (first-class certificate).

Narcissus Eleanor Berkeley (Miss Willmott).—A finely formed white variety of the large trumpet section (award of merit).

Narcissus Dorothy Kingsmill (A. Kingsmill).—A perfect bicolor, with a sulphur yellow trumpet; the perianth segments are magnificent (first-class certificate).

Narcissus Diana (G. H. Engleheart).—A beautiful variety. The segments are white, and the broad flat cup is pale yellow (award of merit).

Narcissus Chancellor (G. H. Engleheart).—A superb Sir Watkin, with paper white perianth segments and a bright yellow cup (award of merit).

Narcissus Virgil (G. H. Engleheart).—A splendid poeticus, with a magnificently coloured crown (award of merit).

Odontoglossum crispum Victoria Regina (W. Stevens).—A magnificent pale heliotrope variety with numerous large and small bright brown spots (first-class certificate).

Odontoglossum Andersonianum Cooksoni (N. C. Cookson).—One of the finest varieties that has ever been shown. The basal colour is pale primrose with abundant brown spots (first-class certificate).

Odontoglossum Wendlandianum Crawshayanum (de B. Crawshay).—Dull brownish rose is the prevailing colour in this variety, the sepals and petals being profusely marked with crimson brown. The lip is white with chocolate spots (award of merit).

Odontoglossum crispum The Earl (W. Stevens).—This is a superb form. The sepals are white, almost wholly obscured by brown. The petals are white with a few large brown spots (first-class certificate).

Petunia Charlotte (P. Erselius).—A superb double white Petunia; it is of perfect form (award of merit).

Rhododendron Abbeyi (G. Abbey, jun.).—A finely formed soft, rose hued variety that makes a handsome truss (award of merit).

Saxifraga aretioides (E. H. Jenkins).—A charming dwarf variety with hundreds of pale yellow flowers (award of merit).

National Primula and Auricula Society.

April 24th.

THE twenty-fourth annual exhibition of this society was held at the Drill Hall, Westminster, and proved to be one of the best of the series. The majority of the classes were well filled, and the quality of the plants above the average.

In the class for twelve Auriculas in pots, dissimilar, there were five competitors. The veteran Mr. Jas. Douglas, Great Bookham, secured leading honours with a choice collection, comprising the following varieties:—Mrs. Henwood, Marmion, Mrs. Potts, Cleopatra, Magpie, grand; Perseverance, Shirley Hibberd, George Lightbody, Olympus, Raven, Abbé Lizst, and Acme. Mr. W. Smith, Bishops Stortford, was second with good specimens of Jas. Hannaford, Cleopatra, Rachel, Mrs. A. Potts, and Mrs. Henwood. Messrs. Phillips & Taylor, Brockwell, were third with Marmion, Miss Barnett, Mrs. Phillips, and Mrs. Dodwell, good. Mr. A. Brown, Birmingham, was fourth; and Mr. P. Purnell, Streatham, fifth. For six plants, dissimilar, Messrs. Phillips and Taylor were first with six good specimens. The varieties were Rev. F. D. Horner, Mrs. Phillips, Miss Barnett, Geo. Rudd, Mrs. Henwood, and Acme. Mr. W. Smith was second with Mrs. Dodwell, Black Bess, and Ruby in good form. Mr. A. R. Brown was third, and Mr. P. Purnell fourth.

There were six competitors in the class for four plants dissimilar, but Mr. P. Hemnell, Winchmore Hill, was well ahead with good specimens of F. D. Horner, Heroine, Geo. Lightbody, and Acme; Mr. J. T. Bennett Poë, Cheshunt, was second with James Hannaford and W. Brockbank in good style; Mrs. Whitbourn, Ilford, came third; Mr. A. S. Hampton, Reading, fourth, and Mr. H. J. Heading, Catford, fifth, while Mr. R. Holding brought up the rear. Seven exhibitors staged in the class for two plants, and a good class it proved to be. Mr. Parsons, Reading, was first with excellent specimens of Heroine and Geo. Rudd; Mr. J. T. Bennett Poë, Cheshunt, was second, and Mrs. Whitbourn third; while Messrs. L. Brown, Brentwood, R. Holding and Williams followed in the order named.

Nine plants were staged in the class for a single green edged plant. Mr. P. Hemnell was first with Prince of Greens, a grand specimen. Mr. W. Smith was a good second with Mrs. Henwood. Third no name. Fourth Mr. W. Smith with Mrs. Henwood. There was a good competition in the grey edged specimen plants. The first prize was taken by Mr. Paul Hemnell with a good plant of George Lightbody. Mr. W. Smith second with a good plant of George Rudd, the same exhibitor was also a good third with Rachael. Mrs. Whitbourn was fourth with George Lightbody. Twelve entries represented the white edged specimen plants, a strong, representative class. Mr. W. Smith was first with a beautiful plant of Mrs. Dodwell; Mr. H. J. Heading was a good second with Heatherbell; Mr. J. Parsons third with Dr. Kidd, and Mr. Heading fourth with a good plant of Mrs. Dodwell.

There were fifteen entries in the class for a single self plant, but Mr. W. Smith was first with a gigantic plant of Mrs. A. Potts. Mr. Holding was second with the same variety, Mr. W. Smith taking third place with Black Bess, and Mr. P. Hemnell fourth with Heroine. In the class for fifty Auriculas, not less than twenty varieties, there were three collections. Mr. Jas. Douglas was adjudged the premier position with a capital exhibit. The chief varieties were Shirley Hibberd; Lord Roberts, Andrew Hiller, Monarch, Perseverance, Rachel, Ringleader, Abbé Lizst, Acme, Fanny Glass, Ruby, and Lancashire Hero. Messrs. Phillips & Taylor, Bracknell, were second, staging Acme, Mrs. Dodwell, Conservative, Ruby, Ariel, Mrs. Dodwell, Geo. Rudd, Rev. F. D. Horner, and Mrs. Henwood, while Mr. P. Purnell was third with plants that were rather drawn.

There was a good entry for twelve Alpines in pots. Mr. Jas. Douglas led the way with superb plants. The varieties were Minerva, Masterpiece, Diamond Jubilee, Perfection, Mrs. H. Turner, Firefly, Trilby, Urania, Lord Dudley, Duke of York (a grand variety), Herald, and Boadicea. Mrs. Whitbourn was second with good specimens of The Bride, Rosy Morn, Lord Roberts, Dean Hole, Apollo, and Innocence. Messrs. Phillips & Taylor, Bracknell, were third with plants carrying more trusses, but they were lacking in quality. Mr. A. R. Brown was fourth; and Mr. P. Purnell fifth.

There were seven entries for six Alpines, dissimilar. Again Mr. Jas. Douglas was successful with plants of splendid quality. The varieties were Urania, Defiance, Zingari, Perfection, Duke of York, and Firefly. Mrs. Whitbourn was second, staging Rosy Morn, Dean Hole, Innocence, and The Bride well. Messrs. Phillip & Taylor were a good third, and Mr. A. R. Brown fourth. For four Alpines, dissimilar, the

first prize was awarded to Mr. R. Holding for specimens of Dean Hole, Dr. Durnford, J. J. Keen, and a seedling. Mr. J. T. Bennett-Poë was second, staging Edith, Dean Hole, and two seedlings. Mr. G. H. Addey, Waddon, Surrey, was third, and Mr. A. Fisk, Leyton, fourth. For a single plant with gold centre there were sixteen entries. Mr. Jas. Douglas was first with Duke of York; Messrs. Phillips & Taylor were second with Mrs. Martin Smith; Mr. P. Purnell third with Dean Hole; and Messrs. Phillips & Taylor fourth.

There were only two entries for twelve Auriculas, Fancies, the first prize being taken by Mr. Jas. Douglas, with an interesting exhibit. The varieties were Alexis, Buttercup (good), Quakeress, Rolt's Green, Lucretia, Lycidas, Golden Plover, Belle, Poppoia, Urania, Golden Oriole, and Comus. Mrs. Whitbourn was second with a much weaker display; the best plants were Belle, La Reine, and Hebe. There were three entries for twelve Polyanthus, distinct, but Mr. Jas. Douglas was well ahead for the first place. The plants were large, with plenty of flower trusses, while the flowers left little to be desired. The second prize was awarded Colonel Dixon, Aske Hall, Chelford, for plants that were rather drawn, while Mrs. Whitbourn was third. Mr. Jas. Douglas was again to the fore for twelve Primroses in pots, with a fine variety of colours. Messrs. I. House & Son, Westbury-on-Trym, Bristol, was third with smaller plants.

There were two entries for twelve Primulas, distinct species or varieties. Here Mr. P. Purnell was the victor, with a capital display. The species employed were *Primula obconica*, *P. denticulata*, *P. rosea*, *P. floribunda*, *P. Sieboldi*, *P. frondosa*, *P. variabilis*, *P. pedemontana*, and *P. verticillata*, a very pretty exhibit; Mrs. Whitbourn followed with good plants of *P. obconica*, *P. Auricula*, and *P. hybrida*. The baskets of Primroses were bright and well arranged, Mr. J. T. Bennet Poë was placed first with a basket of well developed flowers in which yellow was the predominating colour. Mr. Jas. Douglas was second with an attractive collection, and Messrs. I. House & Son were third with a good variety. Mr. Jas. Douglas was awarded the premier prize for Alpines with Lieska, a very fine variety. Messrs. Phillips & Taylor staged the premier Show Auricula with Mrs. Henwood, a grand specimen. The Guildford Hardy Plant Nursery, Guildford, had a fine exhibit of Primroses, Auriculas, in all sections, and a few rock plants, the whole constituting a fine display, artistically arranged.

The Young Gardeners' Domain.

Calanthes.

THE deciduous *Calanthes* are most valuable for winter flowering; their graceful spikes of flowers are excellent for vases in the drawing room or for dinner table decoration, and the plants look very effective if dotted about in the conservatory. *Calanthes* should be potted about the end of March, when they are just commencing to grow, in a compost of equal parts of peat and fibrous loam, with half the quantity of leaf soil and dried cow manure, adding some small pieces of charcoal and plenty of silver sand. Clean 5 or 6-inch pots should be used, half filling them with crocks, and placing a layer of moss over them. The inert soil ought to be removed from the plants, and the old roots should be cut back to about 2 inches of the base of the pseudo-bulbs, as these, with a short bamboo placed in the centre of the pot, to which the pseudo-bulbs should be tied, will keep them steady until new roots have entered the soil. The base of the pseudo-bulbs must be level with the top of the soil, which should be half an inch below the rim of the pot, and not raised to a cone like the majority of Orchids.

When potted the plants should be placed in a warm Orchid house or stove on inverted pots, and be very sparingly watered at first, gradually increasing the supply. The syringe should be freely used to keep moisture between the pots, but care must be taken not to wet the foliage too much. *Calanthes* enjoy plenty of light, but they should be shaded from the direct rays of the sun. The temperature of the house ought to be 65° by night, and 70° to 80° by day, ventilating carefully on all favourable occasions. When in full growth *Calanthes* should be fed about twice a week with weak diluted cow manure and clear soot water alternately; a little Clay's manure diluted with water is also beneficial to them. If attacked by scale, it should be carefully removed with a brush and sponge; thrips must be looked for, and if it makes its appearance the house should be fumigated with XL All.

At the end of the autumn the plants will gradually lose their leaves. They should be gone over often, and the decayed portions removed with a pair of scissors. Water must be given more cautiously, gradually reducing the supply until the flower spikes have been cut, which is usually in November or December, when it ought to be entirely withheld, and the plants should be placed on a shelf in a house where a temperature of 58° to 65° is maintained, and where they will get a complete rest.

Some gardeners prefer to start their *Calanthes* into growth on a layer of moist sphagnum just before potting them, but this is not necessary if watering is very carefully done. The following are good forms of *Calanthes*:—*C. Veitchi*, *C. vestita luteo-oculata*, *C. vestita rubro-oculata*, *C. Turneri*, *C. Byran*, *C. bella*, *C. nivalis*, *C. Sedeni*, and *C. William Murray*.—F. W. P.



Hardy Fruit Garden.

Disbudding.—*Apricots*.—The growths on Apricot trees should be regulated, and eventually trained in a systematic manner, but without crowding. When the growths first push on the trees shoots are present in suitable and unsuitable positions, and, as a rule, are too numerous. A system of gradual disbudding will rectify this, commencing when the shoots can be rubbed off with finger and thumb. First deal with growths that have pushed in positions where they will clearly be of no use. These shoots are those below and behind branches. In the case of Apricot trees a good proportion of shoots which would, if allowed to extend, form foreright shoots, may be shortened back when they have developed three full-sized leaves. These shoots will then form artificial spurs. Some restrictions must, however, be made on the number retained, reducing them by early disbudding. In addition to artificial spurs Apricots produce natural spurs, and these are preferable to the others. In the case of laying-in young shoots the best placed are to be selected, the chief growths being those at the base of the present year's fruiting shoots, one on each being sufficient to retain for succession. There must, however, be a growth left at the extremity, in order that sap may be attracted to the fruit. Growth of opposite character, such as the very weakly and the unusually strong, may be rubbed or cut out early.

Peaches and Nectarines.—Although the disbudding of growths may be commenced as soon as they form, it is not imperative or desirable that the operation be completed immediately. Gradual removals are invariably better, especially when the temperature is low and growth does not proceed very rapidly. Remove first ill-placed growths, wherever situated, then reduce the number of the desirably situated, these being the growths on the upper sides of branches. Foreright shoots are, as a rule, not required, though a few may be retained, shortening them to the third or fourth good leaf, which will enable them to form spurs. Peaches and Nectarines bear best on the previous year's growths, hence the main object of disbudding is to secure the best successional growths, and a fair proportion of others for furnishing the trees, also to prevent overcrowding. Growth is made earliest and strongest on the upper parts of trees, therefore disbudding should commence there first, dealing with the weaker and lower positions last. The best placed shoot must be retained for succession at the base of the fruiting shoots, and another, forming a leader at the extremity, to attract a circulation of sap to the fruit. Vigorous trees frequently produce strong growths from latent buds in the old wood. These are termed robbers, because, being of such strong growth, they appropriate the sap to an undue extent, and do not form fruitful wood.

Plums and Cherries.—When trees are young and in a state of formation, disbudding as a means of reducing the number of growths is of great practical utility in insuring the proper distribution of suitable growths. Afterwards, when the shoots on permanent branches are too numerous, their early reduction by disbudding saves much subsequent time and trouble, and prevents overcrowding. Not only are young growths liable to be too rank, but clumps of spurs in a fruiting condition may prove to be more numerous than desirable. Morello Cherries require treating similarly to Peaches and Nectarines, but the growths retained may be more numerous.

Apples and Pears.—Disbudding is practised on these as a means of thinning out and removing superfluous growths. Established trees trained in restricted form, on walls, and in the open, are furnished with clumps of spurs, among which an unusually large number of growths start. These, if allowed to remain, spoil one another, and it is therefore best to remove a portion. If, owing to their elongated shape, the spurs have been shortened back, there will still be disbudding to be done, growths pushing from the hard wood. These must be rigidly thinned and carefully regulated in number, so that the sun can shine to their base and promote a firm, short-jointed, growth. Young trees may be largely shaped and trained by judicious disbudding in the early stages of growth.

Newly Planted Wall Trees.—Now that these have started freely into growth, and the soil about the roots has become settled, the branches can be trained in position. Water may be needed by the roots, giving them, if the soil is at all dry, a copious supply, and afterwards afford a good mulching of manure, which will greatly assist in retaining the moisture in the soil instead of allowing it to escape by evaporation.

Syringing Wall Trees.—Fruit trees on walls, especially stone fruits, are subject to attacks from insects sooner than in the open. One means of averting attacks from green and black fly is to employ the garden engine upon them in the early stages of growth, and thus wash off the pests before they become numerous. If insects are allowed to

obtain a foothold something stronger than water must be used. Tobacco powder may be dusted upon infested foliage, and washed off next day. A good insecticide consists of softsoap and quassia chips. Dissolve a quarter of stone of softsoap in 50 gallons of water, and to this add the extract of 5 lbs. of quassia chips, this solution being made by soaking the chips in cold water for the previous twenty-four hours. It may also be obtained by boiling the chips.

The advertised insecticides may be used with good effects, following the instructions offered for their preparation. As a rule they simply require mixing with warm water, and to economise the distribution employ a spraying machine.

Fruit Forcing.

Cherry House.—When the stoning has been completed the fruit will commence colouring, then syringing must cease, and not be had recourse to again until the trees are cleared of their crops. A good moisture, however, should be maintained in the house by keeping the surface of the border moist, or if the trees are in pots damping the floor two or three times a day. The temperature must not exceed 65° by artificial means, and 55° to 60° at night, with a little ventilation, increasing it at 65°, liberally at 70°, and not allowing it to rise above 75° without free ventilation, closing at 70°, subject to leaving a little air on constantly at the top of the house. The borders must not lack water, and liquid manure may be given to trees in pots. Aphides must be kept under, fumigation or vaporisation being the only safe process after the fruit commences ripening.

Cucumbers.—Attend to tying the shoots, stopping at one or two joints beyond the fruit, removing bad leaves and exhausted growths so as to maintain a succession of bearing shoots. Water plants in houses abundantly, and with weak liquid manure about twice a week, syringing the foliage and walls about 3.30 P.M., when the house may be closed. Preserve a night temperature of 65° to 70°, 70° to 75° by day artificially, 80° to 85° or 90° from sun heat, ventilating from 75°, being careful to avoid cold currents. Close sufficiently early to run up to 90°, 95°, or even 100°, with abundance of atmospheric moisture in the house. Sprinkle the floors occasionally with liquid manure in the evening, or a little sweetened horse droppings on the surface of the bed will supply ammonia to the atmosphere, nutriment to the soil, and encourage surface roots.

Pits and Frames.—Plants in these will hardly need shading as yet, but the foliage must not be allowed to flag. Use tepid water through a fine rose watering pot at about 3 P.M. over the foliage, a light sprinkling sufficing, closing the lights at the same time, but as the nights are as yet cold, be careful that the foliage becomes fairly dry before night. Close early, and employ a thick night covering. Maintain a good bottom heat by linings, renewing them as necessary. Pot or sow ridge varieties if not already done, keeping these and other young plants near the glass.

Melons.—As the fruits of the earliest plants increase in size the supports must be lowered or otherwise adjusted. Stop the laterals frequently, or thin them where crowded. Supply water or liquid manure liberally to plants on which the fruits are growing rapidly, but avoid excess of either, especially liquid manure, which may injure the roots, and the fruits in consequence will not finish satisfactorily. Plants coming into flower should only have sufficient water to prevent flagging, and a drier condition of the atmosphere is essential to a good set, especially in the case of very vigorous plants. Attend regularly to the setting of the blossoms, and stop the shoots one joint beyond the fruit when impregnated, removing all superfluous growths after the fruit is set. Avoid giving stimulants to plants until the fruit is swelling, when liquid manure may be applied liberally, especially to plants carrying heavy crops, continuing the supplies until they are well advanced towards ripening. Maintain a night temperature of 65° to 70°, 70° to 75° by day, and 80° to 90° with sun heat, closing early, when the plants may be syringed, except when in flower and the fruit ripening. If canker appear rub quicklime into the affected parts.

Peaches and Neectarines.—*Earliest Forced House.*—The earliest varieties are now ripening, and the trees should not be syringed, but the border must not be allowed to become dry. Syringing the trees in the morning has a less prejudicial effect than afternoon, but after the fruit commences ripening, water lodging on the surface is apt to cause the skin to crack, and fungi readily avail themselves of their opportunities, and impart a musty flavour, even when not of a parasitic nature, "spot" often resulting from water resting on the fruit for a time at this stage. As the fruit of the other varieties will not be ripe for some time yet, the atmosphere must be kept genial by sprinkling the borders and paths as they become dry, syringing the trees in the morning, and again when closing the house. The night temperature may be kept at 65° to 70°, but 5° less, though it will retard the ripening, will not tax the energies of the trees so much as the higher temperature. Leaving the ventilators slightly open constantly at the upper part of the house will be an advantage. In the daytime, 70° to 75° by artificial means, and 10° or 15° more with sun heat, will be suitable temperatures.

Trees Stoning the Fruit.—Avoid a high temperature and sudden fluctuations at this stage, not hurrying the trees; a temperature of 60° to 65° at night is ample, and 70° to 75° by day. A little air left on all night will prevent the deposition of moisture on the foliage to any

serious extent. Enlarge the openings when the sun acts on the house, yet without lowering the temperature, which should advance with the increased power of the sun, and a corresponding increase of ventilation. Fumigation or vaporisation should, if possible, be avoided. The former dries the atmosphere, and not infrequently cripples the foliage, when the fruit, from the check, may be seriously imperilled and fall. Early closing is an advantage, but it must not be done to the extent of undue excitement. It is also advisable to allow a little extra latitude to the growth, but on no account permit foliage to be made that must afterwards be removed in large amounts. The growths should be secured in position as they advance.

Trees Swelling their Fruit.—In the early stages, and up to the stoning process, the fruit swells rapidly. The swelling of the fruits is materially accelerated by the maintenance of a genial condition of the atmosphere and the means employed to secure a good root action, which is best effected by a judicious and gradual regulation of the growth by the process of disbudding and in thinning the fruits. These operations should be done carefully. The more vigorous the tree the greater the danger of the fruit being cast in stoning, and the evil is often aggravated by previously disbudding severely, which favours strong growth more than steady progress. Supply water thoroughly to inside borders when necessary, lay-in the shoots, so as to induce growth in proper direction, allowing room in the ligatures for the swelling of the growths. After the fruit has stoned it takes the last swelling, when the shoots should be well tied down, but a moderate extension of the growths will materially aid the fruit in swelling. Any leaves that shade fruit should be drawn aside or shortened, and fruits on the under side or back of the trellis be raised on pieces of laths placed across the wires, so that their apices will be exposed to the light.

THE BEE-KEEPER.

Swarming.

Is it an advantage to allow the bees to swarm? We take it for granted that the majority of bee-keepers who are readers of the *Journal of Horticulture* are anxious to obtain as large a surplus of honey as possible. We presume, too, that a great percentage of them keep their bees in the modern bar-frame hive. Where such is the case we answer the above query in the negative. We do not go as far as to say that it is not possible to obtain both swarms and honey the same season from a stock, but bearing in mind the fact that the honey flow only lasts such a short time, we do not recommend the system of encouraging swarms from frame hives. If an increase of stocks is desired a better plan is to divide them as soon as a stock is well crowded with bees.

If frame hives are used, holding not less than ten standard frames, they cannot reasonably be expected to be filled with brood and crowded with bees, this season, before the end of May. They may be assisted, although there are ample sealed stores in the hive, by giving them a small quantity of thin warm syrup daily from a bottle feeder. As soon as the weather becomes settled and warm a few inches of sealed stores should be uncapped every third day. The bees will then empty the cells, and the stores will be placed in various parts of the hive. As the bees increase in number, and cover the combs, the queen will utilise all the empty cells for rearing brood. If the sealed stores become short, feeding should be resorted to again. All that is required in uncapping the sealed stores is to bruise the surface with the point of a long knife. This can be done without removing the frames, which is an advantage, as the bees are not disturbed, and there will be no risk of chilling the brood.

Prevention of Swarming.

The difficulty many bee-keepers have to contend with is the prevention of swarming. They cannot obtain swarms when they require them, and when they are not required they have them in abundance. As shown in previous notes, some varieties of bees are troublesome in this respect. We find little difficulty in preventing swarming if our native black bees are kept and worked on rational lines. Bees do not swarm on the impulse of the moment; arrangements are made several days beforehand. The hive has become crowded with bees. Queen cells are formed, scouts are sent out in all directions to find a suitable place for their future home. When they swarm they usually cluster on a bush or tree within a few yards of their hive. If they are at once placed in a skep and shaded from the sun until all have clustered, they may at once be placed in a frame hive and shaded without any danger of their leaving the new home. But if they are allowed to remain on the tree where they originally clustered for any length of time, they will rise into the air again and

go straight to the place selected by the scouts, often a mile or more away from the original hive.

To prevent swarming, space should always be provided in advance of the bees' requirements. Only experience will enable the bee-keeper to know when this is required. Much will depend on the age of the queen, as when she is aged and not able to fulfil her duties the bees will often swarm, although the hive may not be half filled. When this takes place it will be found that several queen cells have been started in the original hive. Some of the young queens have been sealed over, and will hatch out in a few days. If the swarm with the old queen is placed in a separate hive she will probably lay a few eggs, and will then succumb. The bees will then raise another queen, but the stock will be weak and useless for that season. For this reason we recommend uniting all weak stocks at this season, as such colonies have usually old or unfertile queens.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Cypripedium bellatulum (J. C. S.).—On page 345 you will find an answer to your question respecting this handsome Orchid, which has been kindly provided by Mr. W. W. H. Young. This, we trust, will be of assistance to you and enable you to succeed with *Cypripedium bellatulum*.

Manure from Horses Partly Fed on Linseed (E. A. R.).—If the manure from horses getting linseed with their food does not contain a large proportion of the latter, or to such an extent as to render the manure close and soapy, it would not be spoiled for growing Mushrooms. The manure, we suspect, contains only the portions of linseed matter given occasionally to the horses as "mash," they in other respects being fed on oats and hay, also bedded with straw, so that the droppings will be of a relatively dry nature, a certain portion of litter being collected along with them. Such will grow Mushrooms, other conditions being favourable. If, on the other hand, the manure be of a soft nature, due to "mashing" the food, it may answer fairly well if largely admixed with short strawy litter; but, as a rule, such material is inadvisable for growing Mushrooms.

Suckers on Peach and Nectarine Trees (Nemo).—The specimens are not uncommon, especially on light soils, innumerable suckers springing from the roots in some cases, the cause generally being a peculiarity of stock in particular soil. The remedy is to carefully bare the roots in the autumn, and remove the suckers close to their origin with the main roots. During growth the suckers should be kept in check as much as possible, so as to divert the sap to the branches. In the case of light soils it is desirable to firm the soil well, or even add stronger. As the trees are old and large this is about all you can do, otherwise lifting is advisable so as to get at all the roots and cut off the suckers quite close to them, replanting in firmer and more substantial soil. We do not think the roots have been cut with a spade, though this is bad practice, and often causes the production of suckers. The suckers are very detrimental to the health of the trees.

"Mimosa" Flowering Outdoors (Miss).—The spray appears to be of *Acacia lophantha*, but much sturdier than usually seen in green-houses. We have no knowledge of this species thriving in the open ground in England. Perhaps some of our readers will favour with their experience.

Phaius Cooksoniae (Young Orchid Grower).—It is pointed out to us by Mr. Norman C. Cookson, the raiser of *P. Cooksoniae*, that the flower you sent, and which we described as a "poor form of *P. Cooksoniae*," is much more likely to be *P. Norman*, as the true *P. Cooksoniae* does not flower until May.

Leaves of Vine Shoots Blackened (R. A. C.).—The leaves are affected by what is known as "browning" or "brunure," caused by *Plasmodiophora vitis*. It is a most perplexing affection, being confined to the young undeveloped leaves, and sometimes destroying the points of the shoots. It has been attributed to a deficiency of lime in the soil, and a dressing of air-slaked lime has been attended with considerable benefit. We have also found dusting over the foliage with it of great advantage. Sometimes the blackening occurs without any determinable organism, the cause being ascribed to an atmosphere saturated with moisture and kept somewhat close and stagnant, so as to injuriously affect the young foliage and induce the blackening. This often occurs with many other plants as well as Vines, and probably has no connection with "browning" as caused by an organism. The prevention in such case is self-evident—namely, the admission of more air, and a genial condition of the atmosphere, so as to promote evaporation and healthy development of the young growths.

Leschenaultia biloba major (W. Raby).—This plant is one of the many that are nowadays seldom seen in gardens, whence they have been ousted by younger, but certainly not more beautiful, favourites. Messrs. W. Balcin & Sons of Hassocks Nurseries usually show a splendidly grown collection at the Temple Show, and may, or may not, do so again this year. It is a New Holland plant. *L. formosa* is

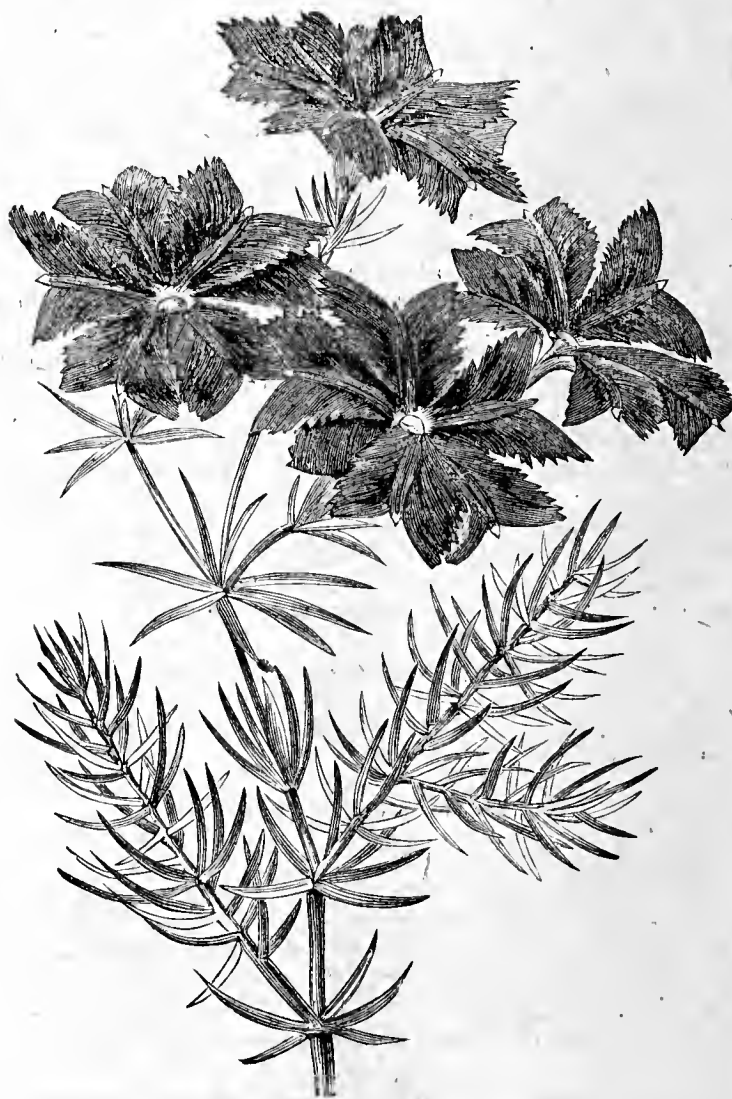


FIG. 101.—LESCHENAUTIA BILOBA MAJOR.

distinguished by the brilliant scarlet hue of its flowers, but *L. biloba* and the variety *major* (fig. 101) have much larger flowers, and of an exquisite blue tint that is always appreciated because it is so scarce. The plants succeed best in peat and sand with abundant drainage, and they require the temperature of a greenhouse. The greatest care is needed in supplying the plants with water, and they should have a position on a shelf close to the glass, free exposure to light being important. Our illustration fails to do justice to this plant.

Bullfinches and Sparrows Destroying Fruit Buds (H. T. H.).—We can sympathise with you, as for many years we had to wage a war yearly against the bullfinches, and found the most effective means for the Plum and Pear trees was trapping in the autumn and early winter, and in late winter and spring having recourse to the gun. The Gooseberry and Currant quarters were dressed with hot limewash, the

bushes being well coated with it on a fine day. It saves the buds from sparrows, and to a great extent, if not wholly, from the bullfinches. We have also found great benefit from running black thread all over the bushes so as to form large meshes. Mr. W. Taylor advised the following wash in the *Journal of Horticulture* as obnoxious to birds. "The ingredients are a quarter of a peck or more of quite fresh quicklime, a pint of sulphur, and 1½ lb. of softsoap. Choose lime that weighs very lightly, dip a few of the lumps in or sprinkle with water (hot water is the quickest in action), and place in a bucket or other vessel, sprinkle a little of the sulphur thinly over it, then add more lime, just damp enough to slake, then add more sulphur on the top of it, repeating the process till all the sulphur is used. When the lime is slaked it will be seen that the sulphur is quite dissolved, and is scarcely visible except in the dark colour it has given to the lime. The quantity of lime used is not important so long as there is sufficient to dissolve the sulphur. The softsoap should be dissolved separately, and afterwards mixed with the lime and sulphur, and sufficient water added to make three gallons in all. If the mixture is not thick enough to apply with a brush, clay or more lime may be added. If the glaring white is objected to mix soot with it. If mixed in the way I have described and applied in dry weather no amount of rain will wash it off; but if lime is used that has been some time exposed to the air the sulphur will not properly dissolve, and the first shower will wash it off. It is necessary to caution my readers against dissolving the sulphur in a house containing plants in a growing state, as the gas emitted will burn up every leaf just as completely as if fire had been used. I have, however, never found trees injured from being painted with this mixture; it is only the sulphurous gas that is dangerous, and that probably would not injure plants in a dormant state." The mixture may be dashed amongst bushes with a whitewash brush, or made thin enough to be passed through a syringe. Birds will not touch buds that are well coated with it. We have no experience of arsenic for the purpose you mention, and severely deprecate its use over fruit trees and bushes, not only as extremely dangerous to animal life, but also deadly to plants.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (G. S.)—*Dendrobium Devonianum*; thanks to your excellent packing the flower arrived in perfect condition. (M. F.)—1, *Veronica elliptica*; 2, *Cytisus racemosus*; 3, *Eupatorium odoratum*; 4, *Anemone nemorosa*; 5, *Saxifraga oppositifolia*; 6, *Iris fimbriata*. (C. S. B.)—1, *Diosma ericoides*; 2, *Sparmannia africana*; 3, *Dendrobium Wardianum*; 4, *D. luteolum*. (S. F. K.)—*Chionodoxa sardensis*.

Covent Garden Market.—April 25th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, per sieve	5 0	to 10 0	Lemons, case	4 0	to 15 0
" Californian, per case	8 0	14 0	Oranges, per case	5 0	15 0
" Nova Scotian, barrel	15 0	22 0	" Californian, seedless	16 0	24 0
" Tasmanian	8 0	18 0	Pears, Californian, case...	6 0	12 0
Cobnut, per 100 lb....	80 0	90 0	Pines, St. Michael's, each	1 0	6 0
Grapes, black	5 0	10 0	Strawberries, lb.	6 0	10 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Mustard and Cress, punnet	0 2	to 0 0
Asparagus, green, bundle	5 0	5 9	Onions, bag, about 1 cwt.	7 0	9 0
" giant, bundle	15 0	20 0	" Egyptian, cwt.	8 0	0 0
Beans, Broad, per flat ...	8 0	4 0	" Spanish, case	10 0	12 0
" Jersey, per lb.	1 0	1 3	Parsley, doz. bunches ...	2 0	4 0
" Madeira, basket	2 6	3 6	Peas, Jersey, lb.	1 9	2 0
Beet, Red, doz.	0 6	0 0	" French, lb.	0 7	0 0
Cabbages, per tally	9 0	12 0	Potatoes, cwt.	3 6	6 0
Carrots, per doz.	3 0	4 0	" new Jersey, lb.	0 2	0 5
" new	0 10	1 3	" Teneriffe, cwt.	18 0	28 0
Cauliflowers, doz.	3 0	4 0	Radishes, Jersey, long, doz.	0 8	0 10
Celery, per bundle	1 0	1 9	" French, round, doz. ...	0 9	0 0
Cucumbers, doz.	2 0	4 0	Seakale, doz. baskets ...	18 0	21 0
Endive, doz.	1 6	2 0	Shallots, lb.	0 3	0 0
Herbs, bunch	0 2	0 0	Spinach, per bushel	3 0	5 0
Leeks, bunch	0 3	0 0	Sprue, French, per doz. ...	9 0	10 0
Lettuce, doz.	0 10	1 2	Tomatoes, per doz. lbs. ...	4 6	5 6
Mint, green, doz. bunches	3 0	6 0	Turnips, bunch	3 0	4 0
Mushrooms, lb.	0 8	0 10	" new	0 10	1 3

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mignonette, doz. bunches	3 0	to 5 0
Arums	4 0	6 0	Narcissus, white, doz. bun.	3 6	4 0
Asparagus, Fern, bunch...	2 0	2 6	" Yellow, doz. bunches	2 0	3 0
Bouvardia, bunch	0 6	0 9	Odontoglossums	5 0	7 6
Carnations, 12 blooms ...	1 9	3 0	Pelargoniums, doz. bnchs	8 0	12 0
Cattleyas, per doz.	10 0	12 0	Roses (indoor), doz.	6 0	8 0
Daffodils, double, doz. bnch	3 0	5 0	" Red, doz.	3 0	5 0
" single, doz. bnch. ...	6 0	8 0	" Safrano, doz.	2 6	3 6
Eucharis, doz.	6 0	8 0	" Tea, white, doz.	3 6	6 0
Gardenias, doz.	3 0	4 0	" Yellow, doz. (Perles)	5 0	7 6
Geranium, scarlet, doz.			" Maréchal Niel, doz.	6 0	12 0
bnchs.	6 0	9 0	" English (indoor):—		
Lilium Harrisii, 12 blooms	6 0	8 0	" La France, doz.	4 0	8 0
" lancifolium album ...	3 6	4 6	" Mermets, doz.	3 0	8 0
" rubrum	3 6	4 6	Smilax, bunch	4 0	6 0
" longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch ...	0 6	0 8
Lilac, white, bundle	4 0	6 0	" yellow, bunch	1 0	1 6
" mauve, bundle	6 0	8 0	" bronze, bunch	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	" dark, French, doz. ...	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	" " English, doz. ...	2 0	3 0
" Yellow, doz. bnchs.	3 0	4 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz.	12 0	to 24 0	Ficus elastica, each	1 6	to 7 6
Arbor Vitæ, var., doz. ...	6 0	36 0	Foliage plants, var., each	1 0	5 0
Arums, per doz.	6 0	8 0	Genistas, per doz.	8 0	15 0
Aspidistra, doz.	18 0	36 0	Geraniums, scarlet, doz. ...	6 0	10 0
Aspidistra, specimen ...	15 0	20 0	" pink, doz.	8 0	10 0
Azaleas, various, each ...	2 6	5 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Boragias, doz.	20 0	24 0	Hydrangeas, white, each ...	2 6	5 0
Crotons, doz.	18 0	30 0	" pink, doz.	12 0	15 0
Cyclamen, doz.	6 0	8 0	Lily of Valley, per pot ...	1 0	2 0
Daffodils, pot	0 6	1 0	Lycopodiums, doz.	3 0	6 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz.	8 0	12 0
Erica various, doz.	8 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	" specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Spiræas, per doz.	8 0	12 0
" small, 100	4 0	8 0			



Poultry Tormentors.

Now that the warmer days are at hand, and all things living are breeding and multiplying, there is great activity among creatures great and small on the farm. We are going to leave the creatures great and confine ourselves to the life history of creatures small; so small, indeed, that unless we are blessed with good young eyesight they might escape our observation altogether. We may see their effects, but miss them. We may say with truth we may feel their effects, for some of us have very sympathetic skins which resent the big red blotches caused by nefarious insects of different kinds. How one poor little flea will cause in some folks a complete upset to the system for hours. What a hunt till the tiny creature is fairly trapped and squashed, and what irritation it can leave behind! Of course, as some folks may be flea proof, so some fowls may be flea proof too! But there must be a cause for the scratching and pecking and ruffling of the plumes that may be seen in any poultry yard by the careful observer.

If we asked the majority of our readers to define a hen pest, the answer would be without doubt flea. The answer would be quite right, but also quite incomplete. The flea is there, cheerful and industrious, but he has company equally active and possibly more injurious. First in order comes the flea; there are several kinds of flea (we believe somewhere about twenty-two varieties), but the one we treat of is known as *Pulex Gallinæ*, a grand name for so small a creature. A well known patent medicine always heads its advertisements thus, "For the blood is the life." The flea thinks the same.

Framed with a sharp, piercing mouth, it feeds on the blood of its victim, be it *Homo* or *Gallinæ*, and returns punctually for fresh supplies. We all know what it is to be weakened by loss of blood, and a constant withdrawal of the "life principle" with the attendant irritation is not calculated to improve the health of the victim. The flea is a nocturnal visitant (need we dwell on that), and a fowl requires rest as well as creatures on a higher scale. The flea is the outcome of dirt, flourishes in dirt, is only happy there; remove the dirt, admit light, and the flea vanishes. Alas! our experience goes to prove that the dirty hen-roost is the rule rather than the exception; there is an idea that any sort of a building is fit for hens, and the "cleaning" which may take place once a year is, as a rule, very superficial.

If fleas were the only hen pest it would be quite bad enough, but there are two other varieties of parasites equally active and probably even more abundant. We refer to lice and mites. Of the louse family there are several varieties, which dispose themselves on different parts of the body, and all cause a violent itching and unrest; they feed on productions of the skin and fragments of feathers, and are invariably most active on unhealthy birds. The prolonged action of lice will of course cause unhealthy birds. Nothing can thrive when in a constant state of irritation. Here again the best cure is cleanliness—damp dirty runs, badly ventilated houses, are the grandest breeding places. It is a strange thing that light and air, Nature's best health givers, are so often denied to our live stock; indeed, it might appear to an unprejudiced observer that we go out of our way sometimes to exclude these grand preventives of diseases.

Next we come to one of the smallest enemies—namely, the vast family of mites, wee things, but most powerful for evil. Some live on the birds at night only, others take up their abode at the base of the feathers; others are of a burrowing nature, and prefer the safety of a home under the skin. Of these, perhaps, the most injurious, because the most abundant, is the red or common fowl mite. Blood is their desire, and it is not to be wondered at that fowls so infested cannot and do not thrive. They become dejected and emaciated, and thus are in a condition to readily fall victims to other and fatal complaints.

We have frequently seen the question asked, respecting a habit some birds have of plucking out their own or their neighbours' feathers. This has been supposed to be a bit of pure mischief, but, like many other mysteries, there was a reason close at hand if only looked for. There is a mite, *Sarcoptes lævis*, which lives and exists among the roots of the feathers. The bird not being able to stand the constant and intense irritation, naturally tries to remove the cause, and in so doing loosens and pulls out the feathers. Sometimes the kind office is performed by a friend with like results. It is not malice prepense, but merely a desire to be rid of a troublesome pest. Remove the pest and the feather plucking will cease.

Then there is the mite which hides under the scaly skin of legs and feet. This is a well known and common disease, but quite amenable to treatment. In fact, there is really no reason why vermin in any form should exist in the poultry yard. It all resolves itself into a question of dirt or cleanliness. Indeed, we might say dirt is among the primeval curses, and we do not yet thoroughly understand its far reaching nature. As the great fire effectually stayed the great plague, so a fire in the majority of hen roosts would be the best thing imaginable.

As this is not possible or practical, it remains with us to purify and disinfect to the best of our power. Dark and damp hen houses should be brightened and aired, all unnecessary lumber removed, and no accumulation of manure allowed to remain. We know it is the custom in some places to remove the manure once a year. There is nothing yet equal to good limewash, with which should be mixed a proportion of dissolved softsoap—quarter pound to each gallon. Every crack and crevice must be penetrated, and all the perches and wood-work treated to boiling water and softsoap, with an admixture of paraffin. Fixed nests are a great mistake; they are bad to clean, and prove ready sources of trouble. We prefer to have movable nests, that can be taken out and exposed to the influence of wind and weather.

Straw is the worst possible lining, as it encourages vermin. At the bottom of each nest should be sprinkled hot lime, or some disinfectant powder or preparation.

If fowls have access to plenty of dust they will keep themselves in a great measure free from parasites. Surely sand and road dust are cheap enough, and a slight sprinkling of paraffin adds much to the efficacy and little to the cost.

Sitting hens are often among the greatest sufferers from vermin. Sufficient care is not taken to let them have a wholesome nest, and during the period of incubation matters do not improve, for the hen will not leave her eggs long enough to allow of proper feeding and bathing. Indeed, we believe and are sure, in many a case where a hen "runs" her nest it is because the place has become perfectly unbearable, and there are limits even to the endurance of a sitting hen. Even supposing she hatches off her brood, they are born among an innumerable horde of creeping things, and thus begin life under most unfavourable conditions.

A grass sod, turf downwards, and hollowed out, makes the best nest, and the intended mother should be treated to a dressing of white precipitate ointment. Rub some under the vent, the head and sides, and then dust well with insect powder. Whether it would be possible to close all openings in a fowl house and then burn a sulphur candle we hardly know; certainly there may be houses where this could be done with good effect. The feather mite should be treated as soon as seen, and the infested parts rubbed with oil of cloves or creosote and lard, one part of creosote to twenty of lard.

As to scaly leg, the rough crusts must be carefully removed, and then a dressing of lard and creosote applied. Sulphur and vaseline are equally efficacious, and following this, in the course of a few days, should be softsoap and warm water. We have often urged the desirability of dipping all freshly imported sheep before allowing them to mix with the rest of the flock, and we now urge that all newcomers into the poultry yard should at least be examined before being turned down. We do not want to improve the breed of vermin by fresh blood, however much we may want to invigorate and strengthen our poultry.

Work on the Home Farm.

The heavy gale which has visited us since last we wrote has made havoc in the stackyards; freshly thrashed straw has been blown into the fields, and the roofs of corn stacks torn off or partly stripped, in spite of every precaution. The gale has been followed by thunder, and, as we write, a beautiful warm rain is falling and seems likely to continue. The vane points due south, and the farmer's heart is gladdened with the hope that the protracted period of his troubles and difficulties are at an end as far as they apply to pasturage for his stock.

During an Easter visit to North Notts we have had many opportunities of hearing farmers' views on the agricultural situation. Everywhere there is despondency. Not merely the old grumbling spirit which has been so often quoted, but something more deeply seated, a kind of hopeless fatalism. They see loss and possible ruin before them and feel helpless; the increasing price of labour is the last straw, and they see no hope of better prices for farm produce.

The constant remark is "What can we do?" They have lost part of their capital and have not sufficient to retire upon, so have to continue the unequal struggle. Wheats on the sandy forest soils are a full plant, but very backward, and the winds have cut the young shoots a good deal. Barleys are only just peeping, but all are now in the ground. Potatoes are still being planted, and seem likely to occupy a large acreage. Up-to-Date and Selected Giant are the almost universal varieties planted.

Young seeds are very bare as well as short of plant. Ewes are very poor, and, contrary to the general rule in such a warm forward district, there are no fat lambs, for they are not yet fat. The grass fields look green, but a lawn mower would hardly get a cut, and cattle are still in the yards. They must now go out as the weather is warmer, and they must crop the pasture as it grows. Grazing cattle are generally low in condition. There will be few half-meated or nearly fat beasts turned out to grass this spring, and there must be scarcity of good beef in June. All strong beasts should pay well for a liberal supply of cake, and especially those which are forward in condition.

Mares are foaling, and the number of casualties are quite up to the average. A dead mare, two dead foals, and a pair of twins also dead, all the property of friends and neighbours, make a long list so early in the season. Big and good town horses are now very dear owing to scarcity.

authorities, including reports of experts on the nature of the soil, and this being so most people would think it would be placed in concise and precise form before a meeting summoned for the purpose of ratification. That the assembled Fellows expected something of that kind was generally understood, and the absence of it afforded a tempting opportunity for expressions of opposition to the whole scheme. The discussion, such as it was, was based on generalities and possibilities, and it was not easy to see how it could have been otherwise under the circumstances.

It is not suggested that if anything like full particulars of the nature indicated had been disclosed there would have been no time-consuming arguments. The probability is there would have been. The argumentation, indeed, was undoubtedly increased because of the greater number of points open to discussion. It would have been better to debate a specific question than declamations based upon assumptions. Every substantial fact in connection with a public proposal may be legitimately and advisably opposed, always provided the opponents put aside ulterior objects. It was however quite clear that the criticism indulged in sought to secure the Society's interests. This was definitely stated, and fully accepted by the Chairman, though if one speaker had not specifically announced that there was no concerted or organised opposition to the project of a new garden anywhere, some persons present might have thought the contrary. The apparent unanimity of the opposition had far less of design than the instinct of self-preservation.

As to the discussion of any particular site, there was none worthy of the name. Limpsfield was the only place officially brought before the Meeting. This one of the leaders of the opposition unsparingly condemned, although he had not seen it. He moreover announced a much better site at Reading, which he also had not seen, but something like a momentary sensation was caused when it was found he had derived his information from a confidential letter. This elicited from the Chairman a statement not previously mentioned, that the Limpsfield soil had been professionally examined and favourably reported upon by Mr. George Bunyard and Mr. George Paul, who it will be conceded ought to know something of the requirements of fruit as to site and soil. In addition, Mr. W. Poupert, one of the greatest and best market gardeners in the world, and Mr. Edwin Beckett, whose competency as a vegetable grower and general all-round gardener is indisputable, had made careful examination and furnished reports.

It is right to say, however, that these reports were not read; nor in any other form, beyond the bare announcement, were they placed before the meeting. Possibly they may have been withheld with other matter not deemed essential for purposes of discussion with the object of saving time; but it is very easy to lose much more time than to save a little by any such methods of economy, as is not unlikely to be demonstrated before the new Chiswick becomes an accomplished fact. But while those authorities agree on the suitability of the soil, it must be admitted that Mr. Arthur W. Sutton in differing from them did not do so without great knowledge on the subject.

It may be well for the Council to recognise the extremely probable contingency that the Fellows of the Society will not be hurried over the important matter at issue. It is not implied that there has been any desire on the part of the Council to rush it through, but there does seem to have been a misconception of the feelings of the Fellows on the subject. It is altogether preferable that the interest in the Society's affairs at this juncture should be keen rather than lethargic. There is not likely to be any curtailment of this interest, and especially since a gentleman who lately sent in his resignation from the governing body has stated in the letter on page 379 that "there has been very little time at recent Council meetings for the discussion of the new gardens." Moreover this announcement came as a surprise to the Fellows assembled last week, that the lease of "Old Chiswick" has yet twenty years to run. Still no greater mistake could be made than that the twenty years should be held to justify a dilatory policy. The passing of every year, and almost

every month, will render more difficult the acquisition of land suitable as to position and price for the object in view.

No doubt a strong feeling exists in favour of a suitable building being erected in London for the Society's meetings, which have now grown into shows, in recognition of the centenary. But the cost announced of £40,000 was held to be insuperable, and the idea was put out of court without serious discussion, by the passing with practical unanimity of Mr. H. J. Pearson's resolution, "that the gardens be removed from Chiswick, subject to the Council finding a site which will meet with the approval of the majority of the Fellows." This is, in substance and effect, exactly what was before the meeting at the onset, and confirms the recommendation of the special general meeting of April 25th. Thereupon an appeal was made by the President to the Fellows to look out for sites wherever they may be, and furnish particulars of any that they may deem suitable. As matters now stand, therefore, the new garden question must be settled before the desired hall can be considered as a memorial celebration in 1904.

Reverting to the Limpsfield site, there was not lacking evidence of disquietude on the assumed co-operation of County Councils. It was not unnaturally felt that financial support rendered by public bodies would involve corresponding representation on the governing body of the R.H.S. The Chairman was able to assure the meeting that there was no question of the Society being financed in any such way as was imagined. Much more likely is it that if on an adjacent site a building were purchased by an educational body for the teaching, among other things, of scientific and practical horticulture, that an arrangement might be made of a mutually advantageous nature, yet on an independent basis, by which the college might be a source of annual income to the Society. This might be expected to be so if the new garden should be at Reading, where there is an excellent college with "horticulture" in its curriculum.

A rather curious idea seemed to be lurking in the minds of some of the Fellows, that a garden, to be "national" must not be in the south at all, but equally handy for northerners, westerners, and easterners to reach. With equal reason they might urge that Kew is not a "national" garden because situated in Surrey. That the "New Chiswick" must be not far distant from the seat of government is a matter of the most obvious necessity; it is the representation on its Council and Committees of provincial horticulturists who can attend that renders the society "national." If it can be made more acceptably so, by all means let propositions be advanced with that object.

Whatever may be the future procedure recommended, it would appear desirable that it be placed as clearly, if consisely, as possible before the Fellows, say two or three weeks prior to the meeting for discussion and ratification. On another important question—the new bye-laws—these are to be published as "suggestive" in a forthcoming issue of the Society's Journal. Cannot the proposals for a new garden and the salient facts on which they are based be similarly published? The statement and the decisions to follow would be of interest to the numerous Fellows who could not attend the meeting. Perhaps the Council will on reflection consider that the two subjects—the bye-laws and the garden—are too large for discussion and settlement at the same meeting?

Singular expressions were heard at last week's Meeting respecting Chiswick. One gentleman who said he "knew much about land," advised the retention of the old garden on the ground that the longer it was held the more valuable it would be to the Society. He evidently thought it was the Society's freehold and not the Duke of Devonshire's. Because he could grow Apples on the breezy heights of Streatham Hill, Chiswick—the fog and sulphuric acid trap—in the Thames Valley ought to be equally productive. With buildings on three sides and the fourth designed for another colony; with deep drainage all round its gravel bed, and thousands of chimneys pouring out noxious fumes for precipitation by fogs, the garden is dried out below and poisoned from above, and all the skill and money in the world could not make it like its once fine old thrifty self. Ah, 'tis pity, but pity 'tis 'tis true.



Odontoglossum crispum Victoria Regina.

DURING the past few years one of the most successful growers of *Odontoglossum crispum* has been Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, whose collection has such an enviable reputation. At Walton Grange is found, in addition to numbers of superb varieties, such an excellence of culture, that the plants must be a constant source of delight, whether they are in or out of flower. One of the latest varieties to be shown before the Orchid Committee of the Royal Horticultural Society at the Drill Hall was named *O. crispum* Victoria Regina, of which a representation is given in fig. 102. The basal colour of this beautiful variety is pale heliotrope with traces of the more commonly seen white, and numerous large and small bright brown spots. The Orchid Committee recommended a first-class certificate for this plant.

Eriopsis rutidobulbon.

The singular rough purple brown pseudo-bulbs of this species distinguish it from any other Orchid, though an approach to it is seen in some of the *Pleiones*. It is not exactly a popular species, but is more frequently exhibited than formerly, and is well worth growing. The flowers are small, with yellowish sepals and petals margined with purple; the lip is similarly coloured. A position not far from the roof glass in the cool end of the *Cattleya* house should be chosen for it, and not much compost must be placed about the roots.

Epidendrum Parkinsonianum.

Quite a number of different names have been given this plant, and one meets with it occasionally under all of them. Recently I saw it in a Norfolk collection under the name of *Brassavola Pescatorei*, and though it was so called at one time, I believe, I know of no authority for the name. It is a rather shy flowering plant in some collections, but is very attractive when it does flower. Coming from various situations in Mexico, naturally it varies a good deal, and this may possibly account for some of the duplicating of names.

I have seen fine plants of it grown in baskets suspended from the roof of an intermediate house, where it usually takes a downward direction as soon as it reaches the sides of the basket. Its large, rough leaves indicate its liking for light, and though these keep a brighter green in a shady, warm house, such plants are unlikely to flower much, and it is better to keep it near the glass. For compost use equal parts of peat and sphagnum moss, and not too much of it, keeping the plants well up in the baskets. The flowers are of various shades of yellow, with green and white markings.

Notes on Culture.

The spring, so far, has been very trying, and now the change from cold winds and dull weather to an almost tropical sun will be felt badly by all plants under glass, and Orchids not less than others. Shading has been little used until now, and all of a sudden we have to rush into it on all hands. But if a little care is taken now the plants will reap all the advantage of the improvement in the weather without the check unavoidable in its absence.

It is only reasonable to expect that plants, after a long cold winter, are not in a fit condition to bear sudden bursts of sun, so although, so far, shading has been below the average, it must now be considerably above for the time of year, or mischief to the foliage is bound to be done. When plants have been newly potted this extra care is very necessary. Already, perhaps, rather severely checked at the roots, the plants must not be further weakened by damage to the foliage, or a condition of collapse might easily be brought about. *Cattleyas* and *Lælias* are especially apt to be injured now, light-loving Orchids though they undoubtedly are.

The value of winter cleaning is now very apparent, for in any plant or house where this was neglected there will be evidence of it, and unless the new growths are to be overrun, the defect must be made good at once, on the principle of better late than never. The silvery edged Stock seed scale will be especially busy after a week or two of this warm weather, and though more easily dislodged from his position than some others of his family, it is a foe of the first magnitude if overlooked or its energy underrated. A good plan to get rid of this pest is to fumigate one night and sponge the plant the

next day, repeating the fumigation a few days later to destroy any chance insects that may be left.

Thunias will grow rapidly now if placed quite in the eye of the sun in a well moistened atmosphere. So will *Dendrobiums* of all kinds, but the growth of these is more tender, and when young it is necessary to shade slightly. I have never seen *Thunias* injured by sunlight provided the atmosphere was moist. If growing in a house the least bit too warm for them this will be very trying now to *Cœlogyne cristata* and its varieties. It is impossible under such circumstances to prevent a little shrivelling of some varieties, and if a late batch is grown these especially should be kept as cool and moist as possible now. They illustrate exactly opposite conditions to the *Thunias* and *Dendrobes* in pots.

The splendid racemes of *Cymbidium Lowianum* are especially attractive when the flowers first open, before that delightful tint of colour disappears from the point of the lip. When it does so we should, if we considered the health of our plants, remove the spikes; but they will last for many weeks if left, and left they are in the majority of cases. So, too, with many of the finest *Oncidiums*; but these are not so long-suffering as the *Cymbidiums*, and often settle the question by shrivelling up and dying when too hard pressed. In all departments there is a waking into life as it were; the houses are

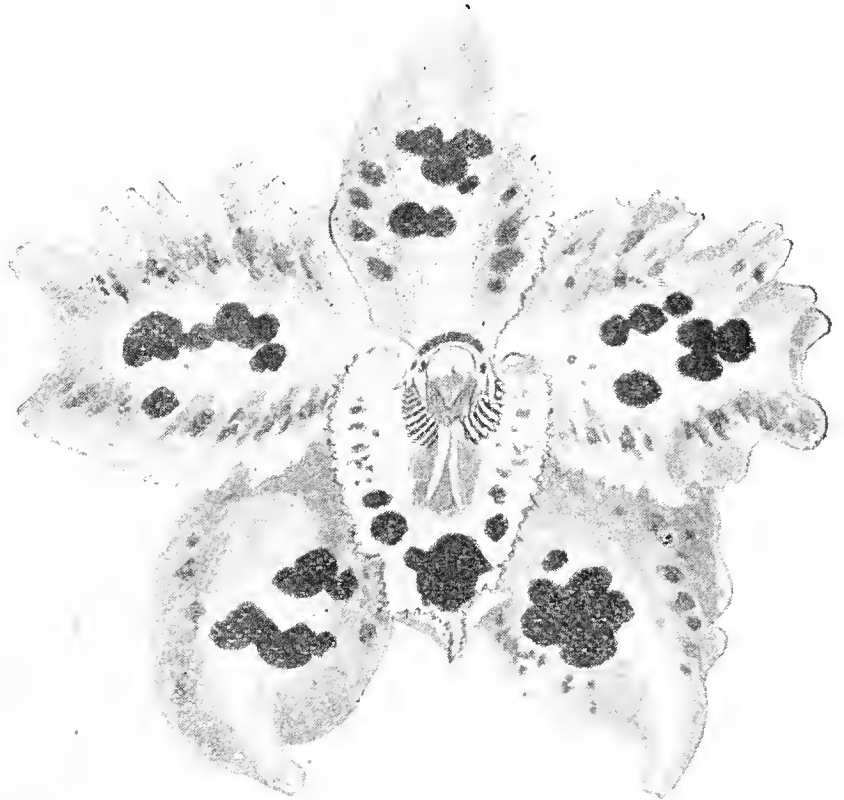


FIG. 102.—*ODONTOGLOSSUM CRISPUM VICTORIA REGINA.*

daily getting more and more gay with blossoms, and will do until midsummer, or after. In the flowering house an attempt must be made to so strike the happy medium with regard to atmospheric moisture, that the flowers are not injured by damp on the one hand, or the plants by opposite conditions.—H. R. R.

EUPATORIUMS AT EASTER—The tall-growing *Eupatorium odoratum* can be had at the Easter festival with a fair amount of certainty, where the conditions obtain for their growth and the means for hastening or retarding them as the season requires. As a conservatory plant *Eupatoriums* have a just claim for space, that is when the structure is of good size, and furnished with ground beds for the arrangement of pot plants. They are too tall for stages generally, but as most conservatories and corridors have some ground space, their growth should be more generally adopted than appears to be the case. They can be grown in fairly large pots or restricted to small ones, the most important condition being a regular water supply. This is necessary because of their freedom in rooting and their succulent growth, which suffers quickly if allowed to become dry. There are few plants of easier growth or propagation, the present being a very good time for securing cuttings. Cut flowers in long sprays may be had from this *Eupatorium*, but it is best placed in water as soon as cut, because it soon flags. If it is gathered for packing it should be deeply immersed in water as soon as removed from the plants, otherwise it soon becomes withered and useless. It may be said against it that at Easter there are a wealth of other spring flowers; but even if this be true, to those who have the convenience there is room for this plant.—W. S.

The Reign of the Daffodil.

New Daffodils.

FEW flowers of the garden have gained such an immense share of public esteem during the past few years as have the Narcissi and Daffodils. In practically every garden throughout the length and

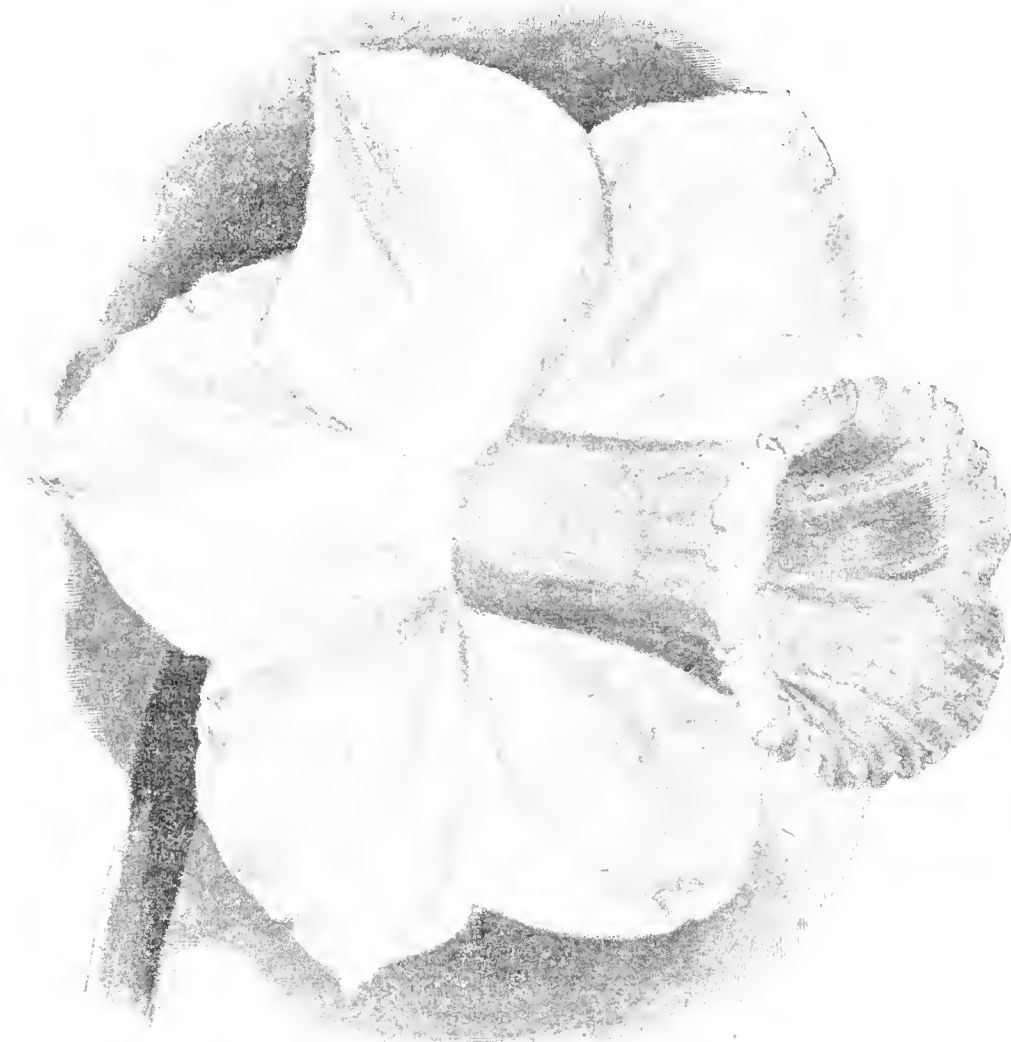


FIG. 103.—NARCISSUS DOROTHY KINGSMILL.

breadth of the land they are to be found in varying numbers, and with this increase in popularity there have happily been decided improvement in their cultivation. It is not, of course, in every garden that one finds the newest and rarest varieties; there are growers who have no desire to be right in the van in this respect, while others have not a sufficiently elastic purse to find the means to purchase exceptionally expensive bulbs. Nevertheless the newer varieties do find their way over a wide area in a very brief space of time, and instead of the popularity of Daffodils being, as some of the pessimists say, on the down grade, it is constantly increasing, as well among the masses as among the classes.

There are, however, and always will be people who must have novelties—new varieties are eagerly sought, and to meet the demand many expert growers are at work. Foremost amongst present-day raisers stands the Rev. G. H. Engleheart, who has done really remarkable service in giving to the world new and improved forms. Each year brings with it introductions from the Andover garden, and the labours in crossing in past years are now bearing abundant fruit. From time to time numbers of Mr. Engleheart's seedlings have been portrayed in the *Journal of Horticulture*, and it will be remembered that these varieties are always characterised by clearness of colour and refinement of shape. At the meeting of the Royal Horticultural Society on April 24th, Diana, Chancellor, and Virgil were all honoured by awards of merit from the Narcissus Committee. Each of these was most excellent, the last named being undoubtedly one of the finest varieties of poeticus that has ever been exhibited. At the previous meeting, too, N. Alma was similarly honoured. Thus Mr. Engleheart annexed four awards at two meetings

in an unfavourable season, and has often done better than this in by-gone years.

Miss Willmott of Great Warley was in great form with Daffodils on this occasion, and received special recognition for four varieties out of a small collection. These were named respectively Charles Wolley Dod, Eleanor Berkeley, Countess Grey, and Mrs. Berkeley. The first two received awards of merit, and the last two first-class certificates. Probably general opinion would decide that Countess Grey was the best. It belongs to the bicolor section, and has a sulphur yellow trumpet of perfect form. Both C. Wolley Dod and Eleanor Berkeley favour the popular Sir Watkin in form, differing from that variety and each other in colour. Another exhibitor of a few varieties was Mr. A. Kingsmill, who received a first-class certificate for Dorothy Kingsmill, which was beyond doubt one of the finest flowers in the hall. It is a large bicolor, faultless in form, and of exquisite colour. The perianth segments are pure white, and the beautiful trumpet is sulphur yellow. This variety is admirably depicted in the illustration (fig. 103).

A fresh exhibitor at the Drill Hall is the firm of M. Van Waveren & Sons of Hillegom, the great Dutch bulb growers. On the occasion of the last meeting the firm sent a small collection, amongst which was found a variety named Van Waveren's Giant (fig. 104), which may safely be regarded as the colossus of the family up to now. It is a noble flower, though some people will probably think it too large. It is upwards of 5 inches across, the perianth segments and the trumpet being of proportionate size. The colour of the segments is pale yellow, while the trumpet is rich yellow. It will probably be some time before this variety is exceeded in size. It was recommended a first-class certificate by the committee of experts. The same firm also sent Olympia, which was a grand variety. Another Dutch house, Messrs J. de Groot & Son, exhibited Wilhelmina, which is a bicolor of considerable size and substance, and is of a good colour.

It will thus be seen that eleven distinct varieties were honoured at one meeting, which fact alone goes far to prove the widespread popularity of this delightful flower. The season has been most unfavourable for the proper development of the blooms, or it is probable that many others of equal merit would have been shown. There were, of course, many other new varieties shown, some of which were excellent, but the Narcissus Committee fixed a very high standard on this occasion to which these might not quite attain, though a few years back they would have been recognised without hesitation. There will probably be a further supply at the meeting on May 8th.

Daffodils in Pots.

FINE showy varieties of these "gay flowers of spring" are now so numerous that a good collection should be in every garden, for although the old and well known forms are attractive and useful for supplying cut flowers, they cannot vie in quaintness of beauty with many of the grand, modern varieties, which have become almost as much the rage as Tulips were in their "palmiest days."

To secure a good stock of a few dozen of the best varieties in commerce would necessitate a larger expenditure than the majority of gardeners could devote to the purpose, but many could make a point of procuring a few each year, grow them in pots, and after drying the bulbs plant them out in early autumn. In a suitable soil they would then in a few years have a largely increased stock. Such choice varieties should of course not be forced, but brought on gradually in cool structures, so as to have them in flower during March and April.

To grow Daffodils in pots well a light, rich, perfectly sweet soil is necessary, and to have it in the right condition it should be stacked from nine to twelve months before being used. Procure fresh, rather light loam, with plenty of fibre, and place in a heap; form this with 18-inch layers of soil and 6-inch layers of short, partially decayed manure sandwiched between, then by the time the soil is chopped down for use the fibre has to a great extent decayed and the manure

sufficiently decomposed to render it inviting for the roots of bulbous plants, which always avoid crude manure. Soil thus prepared only needs a fourth of leaf soil and some sharp sand added to make it thoroughly suitable for Daffodil growing.

When potting the bulbs in autumn, drain the pots well and use those 6 or 7 inches in diameter for the majority, but if a few large potfuls are required for special purposes, 8-inch ones may be safely used. I like the crown of the bulb to stand just above the soil. After potting plunge the pots in cocoa-nut fibre refuse, weighted with ashes to keep the bulbs from being forced upwards by the roots. When the young growth is 2 inches in length remove the pots to a cool pit, darken for a time, then gradually expose to full light, and abundance of air when the weather is favourable. If it is desirable to make a special display of Daffodils in the greenhouse during April, leave them in pots till the flower buds are visible, but of course the plants should be given plenty of room to insure sturdy growth, and a little weak soot water given occasionally will help to secure deep green foliage.

When the plants are removed to a greenhouse they ought if possible to be kept within a foot of the glass, and the floors and stages should be damped during bright weather. When the flowers are opening shade for a few hours daily during bright weather, and support large leaves and flowers by placing stakes round the sides of the pots, connecting them with bands of raffia. Treated in this way they look more natural than when each flower is staked separately.

Now for a few words in regard to varieties, which in reality need seeing to be fully appreciated, yet we trust a few descriptive notes will help intending purchasers in their efforts at selection. During the last few years many new varieties—quite distinct in colour and form from older ones—have been exhibited, and ere long the best among them will find their way into the collections of all connoisseurs. Apricot is one which I think has come to stay, as it is a striking flower, having a white perianth and long straight trumpet, yellow deepening to buff-apricot, and in addition is delicately perfumed. Fred Moore has a giant deep golden trumpet and primrose perianth, and is altogether a flower of great substance. Grace Darling, with its white perianth and soft primrose trumpet, has a charm and grace of its own, and being a strong and sturdy grower cannot fail to please. Proserpine is a flower in which white and yellow shades of colour are combined in a charming manner. Shakespeare seems quite worthy of so great a name, as it stands out clearly as a giant among pigmies; the perianth is sulphur-yellow, and the trumpet broad, large, and of a deep golden yellow colour.

Bulbocodium citrinum, one of the pretty Hoop Petticoat Daffodils, is quite worthy of being grown in pots, as the broad bell-shaped trumpets and narrow twisted perianths, of sulphur colour, combine to make it a refined and striking flower. Mrs. Walter T. Ware is a grand grower, having broad thick leaves and bold flower. Sir Watkin, John Nelson, Henry Irving, Backhousei, Barri conspicuus, bicolor Ada Brooke, b. Empress, b. grandis, Burbidgei, Golden Spur, Emperor, Beauty, King of the Netherlands, Mrs. Langtry, and Shirley Hibberd are all fine representations of the various sections of the genus Daffodil. Let us all strive to grow them well, so that in the days to come our gardens may be rendered gay with their gorgeous flowers during the changing yet hopeful days of spring.—NARCISSUS.

Daffodils at Ditton.

THE Londoner who misses the Daffodil feast at Long Ditton loses one of the greatest treats that are provided for metropolitan horticulturists. There one may find in Messrs. Barr & Sons' unexcelled collection all the most popular varieties by the thousand, and all the newer varieties that have been placed in commerce. The effect

produced by the hundreds of thousands of flowers is literally remarkable, and it is curious to note how some varieties eclipse others in the mass when seen from a distance. Regular visitors go to Barr's, and probably would as soon think of losing their dinners as of missing that short journey to Surbiton. Not that all those who make the pilgrimage are Londoners; by no means. There are experts and others who travel scores and even hundreds of miles yearly for the sole purpose of going through the newer sorts in the collection, and thereby gleaning valuable information respecting them that could with difficulty be obtained elsewhere.

From this aspect of the case the great value of the collection lies in the facilities it affords for precise comparison. There are grown practically side by side, in the same soil and aspect, under precisely similar methods of culture, old and new sorts, and it is under such circumstances that certain results can be insured. A new variety that has been judiciously boomed is there in contiguity to an older one of similar type, and the observer is not slow to seize upon the merits and demerits of both and decide which, from his point of view, is the better of the two. Happily for the producers everyone does not think alike, and thus it results that what one likes another dislikes, and of course *vice versa*. If this was not the case one may naturally suppose that both the bulb growers and the bulb merchants would have just cause for lament. True there are a certain number of varieties that appeal



FIG. 104.—NARCISSUS VAN WAVEREN'S GIANT.

forcibly to the fancy of everyone, but these, comparatively speaking, are few, and at Ditton everyone will find abundance of material from which to make a choice.

This season cannot be described as a favourable one for Narcissus, and were I judging from my own collection I should write it down as a thoroughly bad one. This is not because we have had much inferior flowers, but simply from the fact that the vast majority were in full bloom at the same time, thus curtailing the length of the display to a serious extent. Of course this is not so noticeable in a vast collection such as that at Long Ditton as it is in the smaller, and as a result less varied one, but no doubt even large growers have felt the effects

more or less. The protracted cold and wet weather kept the buds in practically one condition for a considerable time. Then came a few days of unseasonably hot weather, and varieties that had previously been unnaturally late burst their buds, as it were, by magic, and they were gone. We had hundreds of flowers for about four days, but afterwards there was almost a famine in the land, and it was only with difficulty that a dozen really creditable specimens could be found within eight days of the time of plenty. I am hoping for better things next season, and in the meantime had better return immediately to Barr's.

As an individual, no single person has done more (probably not nearly as much) than Mr. Peter Barr in the popularisation of the Daffodil. To his strenuous efforts, continued over a long series of years, we owe their abundance and their presence in thousands of gardens. Such being the case, it is only just and right that when his sons name a variety in his honour it should be one head and shoulders above its fellows. Peter Barr is in all probability the finest Daffodil in the Long Ditton Nurseries, or at any rate it was when I recently paid my annual visit. It is a superb white variety of the Magni-coronati section, and of its colour is unquestionably the finest I have seen. A large, bold flower is this, that is not a bit afraid of looking you in the face as if with a knowledge of its superlative excellence. Not very far from Peter is an unnamed seedling of the poeticus section of Messrs. Barr & Sons' own raising, which for purity of colour, excellence of form, and for substance is unsurpassed. Big Ben ought with such a name to be of the first quality, and so it is. The bright yellow trumpet is exceptionally large, and the paler perianth segments are of splendid shape. These form a trio of new varieties that will probably be heard something about ere many more years have passed away—at any rate, it will not be Messrs. Barr's fault if this is not so.

Notwithstanding such peers amongst flowers as those just named, we have always with us the older sorts—indeed we should be quite at a loss without them. Who would be without a clump of Emperor whose handsome flowers are perennially admired, or Ard Righ (fig. 105, page 375). Then look at the sister flower Empress, with its white perianth segments and its large but refined trumpet; can it be spared? The noble Sir Watkin (fig. 105) never loses one atom of popularity; on the contrary it seems to become a greater favourite every year. It is one that thrives magnificently within the smoky areas of towns, though of course under such conditions the colours are not so clear and bright as when grown in a healthier atmosphere. Duchess of Westminster, under similar circumstances, is one of the best, and at Long Ditton both sorts are superb. The bicolors Horsefieldi and the later flowering grandis need no praise here, for they have made their own reputations by continued excellence over many years. Barri conspicuus is old in years but young in health and vigour, and is grown by the hundred thousand, and yet one is informed that more could be disposed of.

One of the best known varieties of the incomparabilis section is Stella, but it must now go to the wall before the newer Stella superba, which is indeed truly named. It produces its strikingly handsome flowers on stout footstalks well above the foliage, and it must be regarded as one of the varieties of the future. The rich colour of the crown of Gloria Mundi makes it a universal favourite, though, unfortunately, it is not everyone who can have a really good stock of it. The Leedsis, the Burbidgeis, the white trumpet varieties, and many others all ought to have detailed attention, but such a course would involve an immense amount of time, as well as occupying an enormous amount of space, so they must be passed over, for this year at any rate.

Irises and Narcissi seem a natural association, hence I presume the inclusion of Iris reticulata (fig. 105) in the illustration before me as I write. Black and white, however, fail to do justice to this singularly attractive and deliciously fragrant flower, which cannot but adorn every garden where it is grown. It is a favourite with everybody alike, and, when exhibited in good condition at the spring shows by first-class growers, receives general approbation. Messrs. Barr & Sons grow many Irises with signal success, just as they do Narcissi and Daffodils, with hundreds of other kinds of flowers, hence it is that one can never make a mistake in proceeding to Ditton, for there is always something in flower to be admired and to instruct. Late Tulips will, as is customary, be the *pièce de résistance* during the present month. This, at any rate, is the view held by—AN ANNUAL VISITOR.

The Habrothamnus.

THIS well known greenhouse evergreen flowering shrub is admirably adapted for covering the back wall of a conservatory or greenhouse. It may be planted in a border or grown in a large box, tub, or pot. To plant it out and allow free root room is probably the better method of culture, especially if ample space can be found upon which to train the growths. A strong and vigorous plant will grow easily to the height of 10 feet if planted out. In a pot the growth cannot be so vigorous, yet it is possible for good shoots to be made and to become well ripened, which is an essential to free flowering. In unrestricted root space the growth being so strong is liable to fail in becoming thoroughly well ripened, hence it is desirable while encouraging freedom of growth to also apply some restrictive check by confining the rooting to a given, but ample space.

The Habrothamnus is propagated by cuttings, selecting these as short young side growths starting from the old wood in spring. They are best taken off when 4 inches long, being then short, vigorous, stubby shoots. When they are taken a portion of the old stem should be attached at the base. A plant may be induced to form this type of cutting by pruning the stems, and placing the plant in heat, keeping the soil just moist, and syringing daily. Growth will soon push, and may be taken when they have reached the length stated. The cuttings should be inserted round the edges of 3-inch pots, two or three in each pot. Employ sandy soil and surface the compost with sand. In a moist temperature of 65° the cuttings soon form roots. In a greenhouse temperature it would be best to place the cutting pots in a box, pot, or frame, and cover with glass, by this means keeping the cuttings fresh until roots form. The warmth and moisture of a hotbed is likewise a suitable place for them.

When the cuttings have rooted pot them singly, encouraging growth in warmth and moisture. For the first season the plants may be grown to a single stem, or if they are to be grown in a border plant them out as soon as they are well established in the small pots. When intended for pot, box, or tub culture the plants should be systematically repotted. The border ought, of course, to be well drained, and the soil employed consist of loam, leaf soil in equal parts, with a free admixture of sand and a little decomposed manure. Make these materials firm and compact round the ball of roots when planting, so that the new soil is as firm as the old ball. In cases, however, where the plants may have been long in the pots, so that the roots have entwined themselves round and round, some of them must be disentangled and spread out before finally completing. The ball, moreover, should in all cases be moist.

After potting or planting water must be given with care, especially so when the ball is old and very full of roots, as it is possible for this to dry out before the soil surrounding it does so. When once well established there is less difficulty in the supply of water. The plants will need it when the soil on the surface dries. Give sufficient at this juncture, then wait until the same conditions present themselves again.

On becoming well established after planting out freedom of growth will be a characteristic of those in borders, and the main point is to train the growths out well for the purpose of covering the space and to permanently originate some main growths, these being equally disposed over the available training space. Growth of plants in pots after the first season should be cut well back, as it is necessary for strong shoots to be made, which will form a good groundwork or foundation. These ought to be disposed to the best advantage and extended as far as convenient. If it cannot be done in one season it may in succeeding years. From these main growths lateral shoots will extend, which each year after flowering can be shortened closely back. Growth will afterwards break, and the shoots formed during the season will flower freely the next season. This system may be continued each year, and when a main shoot is becoming exhausted another may take its place by training one in from the base. Weak supplies of liquid or artificial manure are beneficial when the plants possess plenty of roots. Assistance of this kind is very helpful just previous to flowering and when good growth is being made.

The Habrothamnus appreciates moisture and warmth when new growth is being produced, but a free circulation of air and abundance of light is necessary to ripen the wood. The flowers appear in winter and early spring, and are borne at the points of shoots. In *H. elegans* they are carmine, in *H. fasciculatus* crimson. Green fly is the greatest pest these plants can have, though they are subject to red spider, but only in a dry atmosphere and when deficient of water at the roots. Green fly is not so troublesome under good culture and free ventilation. —E. D. S.

NOTES & NOTICES

Recent Weather in London.—The difference between Saturday, the 21st, and Saturday, the 28th ult., was remarkable; on the first named it was intensely hot, and on the latter it was decidedly cold with some showers. These were the conditions again on Sunday. Monday was a wet, cold day, with hardly a gleam of sunshine. Tuesday opened milder, and the day continued fine. On Wednesday it was quite summerlike.

Weather in the North.—For the week ending the 30th ult. the weather was decidedly colder, and dense hoar frost occurred on the 27th and the 28th, 6° and 10° of frost being reported from a central county on these mornings. The wind up to Monday evening continued in the N.W., and was very cold. Snow still lingers even on the southern slopes of the hills.—B. D., *S. Perthshire*.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, May 8th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Is there any Natural Limit to the Improvement of Cultivated Plants?" will be given by Mr. W. Bateson, M.A., F.R.S., at three o'clock. A schedule of the Temple Flower Show can now be obtained on application to the Sec. R.H.S., 117, Victoria Street, S.W., enclosing a stamp.

New Gardens for the Royal Horticultural Society.—For the purpose of giving full effect to the decision of the general meeting of the society, held on April 25th, requesting the council to examine further sites for the new gardens of the society, the council request any Fellow who knows of a suitable position to be so kind as to send at once to the office of the society detailed particulars of the acreage, distance from London, nearest railway station, aspect, nature of soil, name of owner or agent, and price.—W. WILKS, *Secretary*.

Thompson's "Gardeners' Assistant."—This standard work on horticulture has been thoroughly revised and enlarged by numerous specialists under the general editorship of Mr. W. Watson, and will, we are informed, be ready for issue early in May. The new edition will be in the form of two volumes, each of about 600 pages, and fully illustrated by coloured plates and engravings.

The Alexandra Palace.—We learn that the Middlesex County Council at a recent meeting adopted a recommendation of the General Purposes Committee to contribute £49,000 towards the purchase of the Alexandra Palace and park of 172 acres, subject to the enfranchisement of the 28 acres of leasehold. This splendid space is thus likely to become the property of the people of North London at no very distant date.

An Important Sale of Books.—The valuable library of botanical books brought together by the late J. T. Barber, Esq., Aston-on-Clun, was sold last week by Messrs. Sotheby, Wilkinson & Hodge. Some of the most important included Mr. C. Cooke's "Illustrations of British Fungi," 1881-91, £21; Curtis's "Botanical Magazine," from the commencement in 1787 to 1879, complete set, £91; Edwards' "Botanical Register," 1815-47, complete set, £44; James Sowerby's "English Botany," 1790-1849, in forty volumes, £36; H. Andrews' "Botanists' Repository," 1797-1815, ten volumes, £10 5s.; C. Loddiges' "Botanical Cabinet," 1817-33, twenty volumes, £38; De Martius' "Nova Genera et Species Plantarum Brasiliensium," 1824-32, £15 10s.; Reichenbach's "Iconographia Botanica seu Plantæ Criticæ," 1823, &c., £18 10s.; Reichenbach's "Icones Floræ Germanicæ et Helveticæ," 1834-62, twenty volumes, £40; J. Bateman's "Orchidaceæ of Mexico and Guatemala, 1843, £11; H. J. Elwes' "Monograph of the Genus Liliium," 1877-80, £10; R. J. Jacquin's "Hortus Botanicus Vindobonensis," 1770-76, £22 10s.; "Plantorum Rariorum Horti Cæsarei Schœnbrunnensis," 1797-1804, £31; "Stapeliarum in Hortis Vindobonensibus, 1806, £14 5s.; "Fragmenta Botanica," 1809, £10; John Parkinson's "Paradisi in Sole," 1629, perfect copy, £22 10s.; Giovanni B. Pirane's works, in twenty-one volumes, £54; P. J. Redouté's "Les Liliacées," 1807, on large paper, rare, £50; Ruiz et Pavon's "Flora Peruviana et Chilensis," 1794-1802, £25 10s.; and F. Sander's "Reichenbachia," 1888-98, £29.

The Gardeners' Royal Benevolent Institution.—The sixty-first anniversary festival of this institution will take place on Friday, May 18th, at the Hôtel Métropole, when the Duke of Portland will preside. His Grace will be supported by the Dean of Rochester, Viscount Powerscourt, the Right Hon. A. H. Smith Barry, M.P., and other influential gentlemen.

Gardening Appointment.—Mr. C. B. Elliott, for the past seven years head gardener to the late Mrs. Wilsons, Luneville, Torquay, has been appointed head gardener to Major Willie, Blythe Hall, Blythe Notts. The place became vacant through the sad death of Mr. Walter Elliott, who passed away on the 5th of April, after a very short illness, at the early age of thirty. There were over 100 applications for the post.

The James Martin Memorial Fund.—We are informed that the committee of the Martin Memorial Fund has decided that the fund shall be closed on Saturday, May 12th. The amount already raised is £133 7s., which includes the £50 with which Messrs. Sutton and Sons headed the subscription list. Those who are desirous of contributing to the memorial to the late expert hybridist should forward the amount forthwith to the honorary secretary, Mr. H. G. Cox, Ferulea, Junction Road, Reading.

Vandalism at Richmond.—The beautifully wooded cottage ground in the Old Deer Park, Richmond, presented by the Queen to the nation, is to shortly have a large physical laboratory at its side, in spite of the announcement previously made by Mr. Akers-Douglas in the House of Commons, that this most beautiful bit of wild country in the proximity of London should not be cut up unnecessarily. The proposed desecration, moreover, would be against the wishes of her Majesty, the donor, who expressed herself as follows:—"The Queen most earnestly trusts that this unique spot may be preserved in its present beautiful and natural condition." It is to be hoped that the destruction of this beautiful woodland sanctuary will be averted.

The Gladstone Conservatory, Liverpool.—The name of Henry Yates Thompson, Esq., will ever live in the hearts of Liverpool citizens on account of his magnificent gifts to the city, and more especially of the grand Palm house in Sefton Park, and lastly, the splendid Palm house which was opened in Stanley Park, a densely populated part of the city, on St. George's Day. Alderman Joseph Ball, the chairman of the Parks and Gardens Committee, was deputed to open the building, which is a model of the temperate house at Kew, and is surrounded by lawns in capital condition, the necessary band stand being near to the main entrance. The conservatory is 120 feet long, 50 feet wide, 10 feet high at the eaves, and 30 feet to the ridge, and with exception of teak ventilators, is composed of iron. A verandah 8 feet wide and 15 feet high, with suitable seats, will be found of great advantage when the bands are engaged. Standing near to the doorway is a capital bust of Mr. Gladstone, and underneath is a passage from a speech in which he stated, "I myself have seen the wild Roses blowing on the very ground which is now the centre of the borough of Liverpool." It must be admitted by all that the conservatory is one more instance of the excellence of the work of Messrs. Mackenzie & Moncur. The value of the excellent gift is upwards of £8000.

Isle of Wight.—On April 4th Mr. F. D. Hills gave an interesting lecture before the members of the Cowes Horticultural Improvement Society on "Bees and their Value to Gardeners." On April 7th Mr. T. S. Rooper gave an instructive lecture under the auspices of the I.W. Horticultural Improvement Association at the Guildhall, Newport, on "The Value of Gardening as a Means of Education." Dr. J. Groves, B.A., J.P., presided. On the 18th and 19th the Ryde Horticultural Society held a two days' show of Daffodils and spring flowers in the Town Hall. The local exhibits were not all that could be desired, but the exhibit of Messrs. Barr & Sons gave every satisfaction and received much praise. Messrs. Barr & Sons have done a great deal to develop the cultivation of spring flowers in the Garden Isle by their annual visits to the spring shows. On the 18th the Shanklin Horticultural Society held its first exhibition of Daffodils and spring flowers in the Institute; it was an innovation which caught on, and is calculated to do much good in this popular island resort. Messrs. Barr & Sons had an excellent exhibit. On the 21st Mr. J. S. Walker read a paper on the "Vin," under the auspices of the I.W. Horticultural Improvement Association, which was thoroughly practical and was much appreciated.—S. H.

Death of Mrs. George Abbey.—We learn with deep regret of the death on April 27th of the wife of Mr. George Abbey, who must be numbered amongst the oldest contributors to the *Journal of Horticulture*. Many readers will unite with us in tendering sincere sympathy to Mr. Abbey in his bereavement. The funeral takes place to-day (Thursday) at St. Alban's cemetery.

Nottinghamshire Horticultural Society.—The schedule of the exhibition of the Nottinghamshire Horticultural and Botanical Society, which is fixed for Wednesday and Thursday, June 6th and 7th, has reached us from the honorary secretary, Mr. C. J. Mee, 29, Long Row, Nottingham. It embodies about fifty classes for flowers, plants, fruits, and vegetables, in several of which really generous prizes are offered. One of the chief classes is that for a 200 feet group of miscellaneous plants, with a first prize of £15 and a 10-guinea silver cup, and other awards of £15, £10, and £5 respectively. This should bring forth some handsome exhibits. All necessary information as well as schedules will be provided by the Secretary at the address given above.

Irish Gardeners' Association.—On Thursday evening, April 26th, the Gardeners' Association of Ireland held its usual meeting at D'Olier Street, Dublin, Mr. O'Kelly in the chair. The attendance of members was sparse. After the usual routine business had been transacted Mr. J. Shaw contributed a highly instructive paper on "The Daffodil," covering the historical part and the labours of our modern hybridists. He laid special stress on the work of Mr. Leeds of Manchester. In covering the ground for classification he quoted several extracts to reveal how Parkinson had first started it, and how we had had to wait until Mr. Baker of Kew undertook the task. In conclusion Mr. Shaw dwelt on the most suitable sites to grow Daffodils; he preferred the moist banks of the river, where the nodding blooms contrast well with the limpid waters below; also in grass and woods. When dealing with the culture, he preferred to top-dress the beds with leaf mould, and, whilst the soil should be rich, his experience would lead him to say that heavy manuring is highly deleterious to the Daffodil.

Chester Paxton Society.—In conjunction with the botanical section of the Chester Society of Natural Science, Literature, and Art, the Paxton Society got together last Thursday an excellent exhibition of spring flowers. One of the large rooms in the Grosvenor Museum was given up for this, and the attendance far exceeded that of any previous year. The largest collection was that from Eaton Gardens, per Mr. N. F. Barnes, who staged excellent examples of culture. Dr. Mules, of the Old Parsonage, Gresford, sent an interesting and valuable collection. Exceedingly effective was a vase containing a dozen blooms of *Narcissus Madame de Graaff*. Close by in another vase was the same number of blooms of *N. Virgin Mary*, the whole stock of which, we believe, is in the hands of the doctor. This is a variety quite worthy of extensive cultivation, and doubtless more will be heard of it in time to come. Miss Humberston, Newton Hall, per Mr. R. Wakefield, also sent an interesting collection of well grown plants and flowers. Other exhibitors included Mr. John Wynne, Waverton; Mr. J. Gibson, Glan Aber Park; and Messrs. Dickson, Ltd., whose collection of *Narcissus* blooms was much admired. Considering the exhibition was a non-competitive one the society has every reason to be satisfied at its success.

Bristol Gardeners' Society.—The second annual meeting was held at St. John's Parish Room on Thursday, 26th ult. Mr. G. Brook presided over a large attendance. The report presented showed that the society is progressing, the present total membership being 127, with an average attendance of about sixty. The financial statement also proved successful, the balance in hand, after all expenses were paid, being £5 2s. 3d. A letter of apology for non-attendance was read from the president, H. Cary Batten, Esq., who consented to continue in that office. The other officers elected were:—Chairman, Mr. G. Brook; vice-chairmen, Messrs. Hancock and Binfield; hon. sec. and treasurer, Mr. W. Ellis Groves; assistant secretary, Mr. W. Haddon; and a committee of fifteen members. During the evening Mr. W. Ellis Groves, the hon. sec. and treasurer, was presented with a handsome barometer. Mr. G. Brook made the presentation on behalf of the members, and in a brief speech spoke of the untiring energy which Mr. Groves had displayed for the benefit of the society and the able way in which he had carried out the duties connected with the position, and expressed a hope that he would continue to act for them. Prizes for foliage plants were secured by Messrs. Shaddick, McCulloch, and Sutton, and a prize for two flowering plants by Mr. Shaddick.

Beckenham Horticultural Society.—Mr. A. Dean delivered an address on "Edible Stem Plants" before the members of the above society at the Beckenham Public Hall, on Friday, April 27th. Introducing his subject, Mr. Dean alluded to the fact that the majority of young men despised work in the kitchen garden, considering it to be of a menial character. The great desire was to get in the houses, entirely neglecting what older and more experienced gardeners found to be all-important—viz., the cultivation of vegetables in sufficient quantity and of the best quality. Asparagus, Seakale, and Rhubarb were considered to be the most important of the edible stem plants, on account of the long season each might be had in good condition—where the soil was suitable—and some valuable hints were given on their culture. A hearty vote of thanks was accorded the lecturer.—M. W.

Birmingham Gardeners' Association.—At a recent meeting of this society, Mr. W. B. Latham in the chair, Mr. William Spinks read an interesting and instructive paper entitled "The Aquatic Garden." A select list of some of the best and hardiest hybrid Water Lilies was given, as well as of other suitable water and waterside plants. In the ensuing discussion Mr. W. Gardiner alluded to the essayist's successful arrangement and the planting of the superb rock and water garden at The Uplands, Sellyhill, near Birmingham, and of which illustrations were so admirably shown in the *Journal of Horticulture*, July 20th, August 24th, and September 21st last year. The meeting was further enhanced by several exhibits, including examples of hybrid *Cinerarias* and *Coeogyne Sanderiana*. A certificate of merit was awarded to a finely flowered specimen of *Dendrobium Brymerianum* of superior form, and Mr. W. Gardiner exhibited specimens of well-kept English, Tasmanian, Canadian, and Californian Apples illustrative of varieties from various quarters of the world.

Frost and the Jersey Potato Crop.—It is reported that owing to hard frost on Saturday night the Jersey new Potato crop has suffered severely. Hundreds of acres which on Saturday were looking remarkably well have been blackened. It is not possible to estimate the loss, but it means ruin to many farmers. Much damage has also been done to the early crops in East Kent by the extremely cold weather following the recent few summer-like days. Nevertheless the fruit prospects are more promising than for several years. Where early Potatoes are up, the haulm has been destroyed by the night frosts.

Frost Injuries in Bedfordshire.—On Thursday last, April 26th, a disastrous frost was registered here, the thermometer on the ground recording 18° 8' Fahr., or over 13° of frost. The result is severe injury to flowers and plants. Plums and Damsons have a most abundant display of blossom this season, and all the flowers expanded at the time were destroyed. Some of the later varieties and trees still, however, afford the prospect of a crop. Early flowering Pears are also severely cut, Gooseberries have suffered slightly, Red Currants considerably, and in some places the early Strawberries have their leaves and flowers blackened, though the latter are still in the bud stage. Quantities of Asparagus have been cut down, early Rhubarb is somewhat damaged, and Cabbages have all their fully developed leaves browned. In one low-lying district acres of Cabbages have been greatly injured, while seedling vegetables like Brussels Sprouts have been generally destroyed.—R. LEWIS CASTLE, *Ridgmont*.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1900.										
April.										
Sunday.. 22	S.S.W.	deg. 60.1	deg. 52.8	deg. 73.4	deg. 41.2	ins. —	deg. 51.6	deg. 49.1	deg. 46.5	deg. 32.7
Monday.. 23	N.N.E.	49.0	46.1	62.3	45.3	—	53.2	49.8	46.9	44.8
Tuesday 24	E.S.E.	51.6	46.8	61.3	39.5	0.07	52.6	50.3	47.1	31.6
Wed'sday 26	E.N.E.	45.1	44.4	47.1	43.3	—	51.9	50.3	47.5	34.9
Thursday 26	E.N.E.	42.8	37.5	51.9	29.2	—	47.6	49.7	47.8	17.6
Friday .. 27	W.N.W.	47.1	43.4	50.7	31.3	—	46.6	48.7	47.8	22.1
Saturday 28	E.N.E.	42.1	37.5	52.5	40.2	—	47.2	48.1	47.8	34.8
MEANS ..		48.3	44.1	57.0	38.6	Total 0.07	50.1	49.4	47.3	31.2

The weather for the past week has been fine but very dull, with cold wind.



The Barr Daffodil Cup.

WHILST generally agreeing with "Daff's" criticism, on page 333, I can only conclude that its tone may lead some to infer that a reflection is cast upon the single exhibit to which the cup was awarded. Probably this was unintentional on his part, but the fact remains that a jarring note has been struck, and one cannot but sympathise with the winner when he says, "There is certainly no honour in winning a prize when there is no other exhibitor, . . ." Under most circumstances I could agree with your correspondent on this point, but in this case it looks a little ungracious to detract from an exhibit of high merit, which obviously could not have been conveyed from Lismore, in the south of Ireland, to London without much trouble and some expense. Whilst the lateness of the season accounted for the absence of competitors, I do not think that it provided much excuse for the non-employment by them of legitimate methods to hasten their blooms in order to compete at a given date with the more naturally favoured ones from the Green Isle. As an old exhibitor of the Daffodil I can say that it is much easier to push forward sufficient blooms to make up a representative stand than it is to retard them in an early season; and that none appeared to think it worth the "struggle," may have been Miss Curry's misfortune, but was certainly not her fault. Under the conditions in which the Barrian cup was won this year there seems no sound reason for the attempt to deprive the lady of her honours, and evidently the judges were of this opinion.—S. H. B.

Garrya elliptica.

IN a recent number of the Journal you gave a capital illustration of the above plant, and in the subjoined text, in speaking of its worth and beauty, you referred to it as being not reliably hardy in the south unless grown as a wall plant. This, I regret to say, is the generally accepted theory with regard to its requirements. As a fact its value in the bush form seems quite unknown, though it is not only quite hardy in many localities, but also quite amenable to cultivation as a bush plant.

Only a few yards from where I write, until quite recently, a pair of very fine plants grew and flourished amazingly. During the past winter the weight of snow, coupled with the increased weight on the branches by the great load of catkins, brought the plants down somewhat, and though still profusely laden, as in all probability they had never been laden before, with catkins, this became an offence in the eyes of the gardener who tends the place some two or three days weekly. The plants were some 10 feet high and through, and were fully thirty years old, as the gardener had known them upwards of twenty-five years, and he found them good plants.

During all these years no knife had been allowed to touch them, the plants being justly treasured by two ladies, one of whom has passed away, the other an invalid. But notwithstanding that the plants were so greatly prized by the owner, the gardener in some way obtained permission to prune them "according to his judgment." Unfortunately this latter was of a far reaching character, and as time was money, a large sized hand saw was requisitioned for the work, and in a few minutes the beauty and growth of thirty years was strewn at his feet, the plants cut down to within 2 feet or so of the ground. Each of the plants had several principal lateral branches proceeding from a main trunk about 9 inches in diameter, several of the leading shoots being about 3 inches diameter.

The plants formed so striking an instance of successful culture that I obtained a leading lateral and showed the same before the Floral Committee at the Drill Hall at the last meeting, my chief desire in so doing being to demonstrate the value of this beautiful shrub, and to extend its cultivation in the bush form. In all those thirty years these plants had not been injured by frost, and the great wealth of catkins as the two plants were gradually closing together made one continuous bank of grace and beauty. The plants occupy a slightly raised and sloping bank, which must be excessively dry in summer. The soil is exceedingly poor, and in all probability has not been manured since the examples were planted. On the opposite side of the road a belt of trees, principally Sycamore, shield them from the north, while they are rather exposed to the east. The wood of the Garrya is very heavy and hard, quite equal to Box or Holly for weight. I believe the exhibited log has been accepted by the Kew authorities as a sample of British-grown Garrya.—E. H. JENKINS, *Hampton Hill*.

The New R.H.S. Gardens.

IN one respect the otherwise almost abortive meeting of the Fellows on the 25th ult. did something practical. It settled unanimously the question as to leaving Chiswick, and getting a new garden. That is something, and at future meetings the president can, and indeed must, put his foot down firmly on any further attempt to cause the Fellows to recur to it. An absolute mandate given on the most ample notice to all the Fellows has now been given to the council to find a site for a new garden, but it must, of course, be one satisfactory to "a majority of the Fellows," although all who know anything of the conduct of general meetings know that resolutions are carried only by majorities, and that consequently Mr. Pearson's addendum to the council's resolution was largely surplusage; still it serves to show, into such a muddle had the business fallen, that the meeting greedily caught at anything to extricate it from its mess, and, therefore, adopted this surplusage gladly. But whilst the resolution pledges the council and the Fellows to find a new garden other than the old one at Chiswick, it does not stipulate for hurry. But every year Chiswick becomes a less satisfactory garden, and every year its lease becomes of less value, hence the sooner the new gardens are found the better.—A FELLOW.

I CANNOT but regard it to be a great misfortune that so large a number of Fellows of the Royal Horticultural Society should have assembled at the Drill Hall on Wednesday last to so little purpose. It was a splendid opportunity to transact business absolutely wasted, and there was too ample evidence that English gentlemen can be as capable of obstruction as can Irish M.P.'s. To them wasting a few hours is of no moment; to business men it is a matter of the greatest importance. Whenever any fresh meeting of the Fellows is held, it is hoped that not the interests of those who want to prevent business, but that the welfare of the busy men will have first consideration.

But if any evidence were needed as to the irreconcilable views held by various Fellows as to the most desirable place for the new Chiswick were wanting, such evidence was amply furnished at the meeting. Everyone wants a garden in his own locality apparently, and so strong was that feeling in one quarter that it was actually suggested that a site could be obtained some 150 miles from London, as though such were possible or practicable. Any more absurd suggestion can hardly be conceived. It is a matter of absolute necessity that because London is the home of the society, and because all its ordinary meetings are held there, that the new gardens must be within reasonable distance of London—certainly not farther than thirty miles, and less if possible. That ready access can be had to such garden is of course important, but under no circumstances is it possible to expect that any ground suitable for such garden can be purchased immediately contiguous to a railway station anywhere within thirty miles of London, as in all such cases land close by is bought up for building purposes, and it would be folly even were ground obtainable to plump down a garden just where in a few years it would be built all round. Under no circumstances, therefore, can ground close to any railway station be had.

It was a matter for profound regret that a document, without doubt an important one, because emanating from an authoritative source, should have been so freely referred to at the meeting, because that document was at once strictly confidential, and had not been published to the Fellows. It was also specially bad taste to mention the name of an absent yet most able and influential member of the council, who is abroad, as though that absence meant disapproval of the action of the council. That very member some months since at the Drill Hall asked me, as they must get a new garden somewhere, to acquaint the council did I hear of any suitable land in Surrey or elsewhere. To assume that Mr. Harry J. Veitch was antagonistic to the council's proposals was most unjustifiable. It was deplorable that Fellows should still persist in trotting out the proposals for the providing of an exhibition hall in London. That hall at least it seems may be in London, and not in Gloucestershire.

What was the use of flogging so dead a horse as that? It would take more money to purchase a site for a large hall in a central part of London than it would cost to purchase the Limpsfield land as proposed. It was unfair on the part of Sir Michael Foster, M.P., to decry the present hall as being too dark. It may be dark six out of the twenty-four times occupied in the year with meetings, but what hall in London would not be dark on some of these black smoky days, so plentiful in winter? Where, too, could be found a hall that could have so admirably housed the splendid show held on the 24th, or the many hundreds of visitors, as did the Drill Hall? Why do not people think of these things and talk common sense, rather than be crying after the unattainable?

The resolution passed at the recent meeting although it does not shut out of sight the getting of an exhibition hall somewhere, does emphatically do so, as the method of celebrating the society's centenary. It further makes it to be even more imperative than before, on the council to find a site for the new Chiswick. Whether considering all that the council has done in endeavouring to secure sites already, it can find more that shall be acceptable to a majority of the Fellows is very doubtful, and remembering the rough treatment the suggested Limpsfield site so far has had, certainly the council has

little encouragement to do much more than it has. But it is determined a new garden is to be provided, and when an adjourned meeting is called the nature, cost, position, and probable suitability of the selected or other site, alone can be discussed. It is hoped that at any future meeting the bye-laws and the new garden site will be kept quite separate.

The tail of the resolution passed at the meeting signifies that the "majority of the Fellows" must be the majority voting at some special general meeting of the Fellows called for the special purpose of dealing with the council's report on the matter. That such vote will be determined by the nature, extent, and lucidity of the report furnished, there can be no doubt. I think the council would act very wisely in printing such report, with a small map of the proposed ground, and circulate it amongst all those Fellows asking for a copy. That would facilitate matters immensely.

It is very surprising to me that any person should still cling to poor old effete Chiswick as constituting a suitable garden for the society. I have known it intimately for thirty years, and have always felt it was a wretchedly poor place to pose as the leading horticultural garden of the kingdom. Kew is of course splendid. It is a grand garden, but its existence close by only serves to make poor Chiswick look all the more poor and inferior by contrast. It has hardly a glass house that a gardener would care to have; and its huge vinery, noble an erection as it is, only serves to make men marvel why it should ever have been built.

As an example of a vinery it is deplorable. Although both Mr. Barron and Mr. Wright have done all that man could do to make the garden a success, the place is cursed by its surroundings, or, as the scientists say, by its environments. When admirable market gardens are quoted as existing closely, what amazing ignorance is shown! All surrounding market gardens have been or are being built over rapidly, and just as pure air is being excluded from the district smoke, soot, and fog are accumulating yearly. The soil may not be exhausted, but it has become too intensely porous to have in it any retentive properties. Thus things in all parts of the garden suffer at once from excessive soil dryness and superheated atmosphere, because the garden is so boxed in by buildings. Fogs are always worse in the south-west of London than anywhere else, and when they kill autumn sown Onions wholesale at Chiswick what more need be said? Every sensible man knows that for all practical purposes Chiswick is played out. It will be specially imperative on the part of the council in selecting a new garden site to have it quite outside the metropolitan obnoxious smoke and fog area.—A. D.

Gardening in the Green Isle.

MANY, too many, on the Sassenach side of St. George's Channel seem to have some vague idea that the fauna and flora of the Sister Isle are chiefly represented by "the gentleman who pays the rent" and that noble tuber the Potato. The tendencies of late years should go far to dispel these hazy notions. As regards the first, to anyone seeking good specimens of the porcine species I would rather recommend Berkshire. No longer can we regard Erin as the happy grunting grounds, for you may traverse miles, of County Dublin at least, without meeting a single "gentleman." But the Potato? Well, that is another illusion; for even in this department, at the Potato Tercentenary held in Dublin in 1896, Berkshire too bore the palm, the great Reading firm surpassing all exhibits for quantity and quality staged in the round room of the Rotunda. Messrs. Sutton's display was the best they had ever made, weighing over 2 tons, and all so cunningly contrived as to show off the best points. It was the apotheosis of the Potato, but, alas! not Irish. Still the fact remains that in the economy of Irish life the Potato plays an all too prominent part.

The Tercentenary aforesaid was at one and the same time a bright success and a dismal failure. Arranged and carried out by the Irish Gardeners' Association, with the hearty co-operation of gardeners, growers, and scientists, with representative collections from England, Scotland, France, and America to compare with those of the Emerald Isle; and being, too, the right thing in the right place, what more was wanting? Here were the Potatoes, where were the people? Here was his Excellency, Lord Cadogan, standing shoulder to shoulder with a few Irish gardeners, re-counting in his happiest vein the failures of his chef to place a decently cooked Potato upon his table. Here were lectures, limelight views, scientific discussions, practical expositions; in short, all that could be said, shown, or done in the matter, yet the Tercentenary came and went practically unnoticed and unknown. The highest praise could not but be bestowed upon the little band of workers whose labours of love must have been of the highest educational value had they been availed of by the public.

That the finest peasantry in the world still depend upon a Potato patch for their staple food goes without saying, and in that mistaken dependence is to be found, one thinks, an explanation of the poverty of

cottage gardening in Ireland. Cottage gardening as practised in the humble homes of England is virtually unknown, and one can only conclude that were it otherwise its refining influence and economic value would prove potent factors for good in the welfare of the people. There are, however, things which come not within the scope of this paper. Thackeray's semi-satirical criticism of Ireland, as he saw it, might still apply if derived from the same superficial observation. But he saw, as too many see now, only the surface of things. "Still waters run deep," and by long and patient observation only are the undercurrents of life revealed. Then ensues an explanation of things which cannot be explained away, and brings a clearer understanding to many who cannot understand the Irish, and, unfortunately, never will. Be it our endeavour here, however, to deal with things as they are, and not as they seem, in turning over brighter pages in the gardening history of the Green Isle. It contains many beautiful pictures, and gardeners in the fuller sense of the term are not rarities.

Within touch of the Milesian metropolis is more than one stately home embowered in its tall ancestral trees, and numerous pleasing examples of lesser degree adorn the environs of "the car-drivingest city." Overlooking Dublin Bay, among vistas of surpassing beauty, the love of gardening appears to have long since taken deep root, although there are not a few places showing by what remains that its glory has departed. Some of these Irish homes of gardening must have been among the first to avail themselves of Paxton's marvellous creations of iron and glass, and commodious curvilinear plant houses are frequently to be found which point to a period when the gentle art was in an exceedingly flourishing condition. One is often surprised, too, by the large extent of walled-in gardens, the building of the walls of which would alone be a serious matter to contemplate. For instance, at Carton, Maynooth, the original kitchen garden as formed by James, first Duke of Leinster, enclosed twenty-six acres with boundary and dividing walls, and this when reduced by Augustus Frederick, the third duke, to ten acres, as it now exists, forms no mean appanage to a noble demesne. Generations of gardeners have come and gone since the old-fashioned wall nails, still bristling in the ancient boundary wall, secured those well-trained trees in which our forefathers delighted. All this points to a glorious past in Irish gardening, and one ventures to include a passing thought of those past masters of the craft. In the ancient graveyard of Grangewilliam, immediately outside of the Carton demesne, may be seen a huge recumbent limestone slab toned down by age and Lichens. The deeply graved inscription enables the curious to decipher without difficulty that it marks the last resting place of Patrick Allen, sometime gardener to the nineteenth Earl of Kildare, and James (aforementioned) the twentieth Earl and first Duke of Leinster. He it was who ruled over the twenty-six acres of kitchen garden with all the auxiliary horticultural adjuncts then befitting a nobleman of rank; and, rightly or wrongly, one infers that Patrick was a son of the soil. The difference in that respect 'twixt then and now being that Scottish and English gardeners are in the ascendant in the matter of situations held by them. Rest on, old warrior of the spade, in thy doubtless well-earned rest, although neither 100-guinea Orchids exercised thy care, nor the joys and griefs of a "Mum" grower came within thy ken!

One is now and again surprised in visiting some retired, unpretentious place to see relics of former grandeur in the garden; hence it may be deduced that horticulture must formerly have held high rank in Ireland. Some time since a great literary gardener wrote saying we (English) hear too little of what is going on in Ireland; and, it may be added, the gardening world of Ireland is still to many a *terra incognita*. Some of these old world places one would fain describe, for there is that about them which "age cannot wither nor custom stale;" and in this severely practical age they are to us—

"Voices of the past, links of a broken chain,
Wings that can bear us back to times
Which cannot come again."

There are, probably, more of these old-fashioned gardens with all their constant, nameless grace to be found in the Green Isle than elsewhere in the kingdom, and the reason is, perhaps, not far to seek. When fickle fashion ordained a modern system the expense of conversion with the new order of keeping was a serious consideration, hence they escaped the innovating hand. Their owners could just afford to keep them as they were, and no more; but that was all that was necessary, and one feels thankful that it was so. Still, old customs, like old superstitions, die hard in Ireland, and, as relates to the commercial aspect of gardening, this has been and is undoubtedly detrimental. Too many of those who formerly won a fairly comfortable living in eatering for the market appear unable to conform to the march of time, and are dragged along in the procession.

Cut flowers and perishable fruits are scantily supplied to meet the demand which exists; hence in their season, Strawberries from Kent, Narcissus from Scilly, and a host of perishable products are consigned to Dublin, *via* London, when such might by a little enterprise be equally as well grown in favourable localities at home,



Fig. 105.—DAFFODILS AND IRISES. (See page 370.)

and above and beyond that placed on the market in all their pristine freshness. In regarding this commercial aspect as an important question, so far as Ireland is concerned, it may not be out of place to briefly note what is, what has, and what might be done *pro bono Hibernia*. Market gardening on a small scale was for many years a feature on the sunny banks of the Liffey between Dublin and Lucan. This was not the common order of its kind, but that picturesque medley of many things which afforded such a charming *coup d'œil* for over two miles to travellers by "the Lower Road," and both pleasure and profit to the small proprietors. The steep slopes facing due south are a veritable trap for sunbeams, and here were to be seen small plots of early Peas, the earliest of early Potatoes, Strawberries ripening a month before those elsewhere, patches of Pinks and other flowers suitable for cutting, herbs, and marketable stuff galore; snug cabins with thatched roofs, on which trailing Nasturtiums tried to hide the brilliantly whitewashed walls, were dotted ubiquitously about; and doubtless many a stouthearted Irishman now serving his Queen and country in less genial climes oft thinks of auld lang syne and the Strawberry beds amongst which he wandered a sturdy, bare-legged gossoon. That is as it was; now in many a place where once a garden smiled a few ragged goats browse among the ragweed, and ever and anon a roofless cabin lends sadness to the scene.—K., *Dublin*.

Flowering Trees and Shrubs.

THE advance made by vegetation from about the 17th to the 24th of the present month was remarkable for its rapidity, and it is not often that trees are observed to positively leap into life, as has this year been the case. There were few signs of activity at the beginning of the period named, but at the end trees were almost in full leaf, and the hedges were green with bursting buds. Chestnuts are recognised as exceedingly rapid growers, but this season they must almost have established an English record, as they grew several inches in six days. Lombardy Poplars, too, which are not generally so hurried in their movements, came from buds to leaves of the size of a shilling in the same period.

It is, however, useless to attempt to individualise all the examples of rapid growth, as such a task would involve the enumeration of all the plants and trees that grow in our gardens, pleasure grounds, and woods. The varying tints of green are before the dweller in the town as well as in the country, but they are not so appreciable or so delicate in the former as in the latter. The time of the development of the leaf is to many people symbolical of hope, and is to some the period of the year that is most admired. No one can fail to be gladdened by the bursting buds and the developing leaf—promises of the riper beauties of the summer and the autumn. Of these foliage trees there are perhaps more than enough in our gardens, as they have been planted without due consideration of others, which by the beauty of their flowers as well as of their leaves are worthy of the closest attention from planters. As a matter of fact, their partial exclusion from some gardens is tantamount to lacking one of the most attractive features at this season of the year and onwards for several months.

So magnificent are the flowering trees that it is no light matter to decide with what a start ought to be made. This type of vegetation can be regarded from two distinct standpoints. 1, Trees that produce flowers and fruits; and 2, Those that are valuable by reason of their flowers alone. The former are generally relegated to the more utilitarian fruit and vegetable quarters, but at the same time it should be remembered that they have an exquisite beauty, of which no exact counterpart can be found amidst trees that produce flowers only. What is more beautiful than an Apple, Pear, Plum, or Cherry tree when the branches are wreathed in delicately tinted or pure white flowers? Surely those plants which combine to perfection the ornamental as well as the useful are deserving of as prominent a position as those that have the former alone to recommend them! Look at the Siberian, the Dartmouth, and John Downie Crabs. Are they not absolute perfection?

That there are gardens where fruit trees are utilised for the embellishment of various positions is readily acknowledged, but that these are too few is an incontrovertible fact. Every belt of trees that forms a background for lawns or shrubberies ought to number amongst its occupants a certain proportion of fruit bearers, not necessarily for their harvest burden, but for the flowers they give in their slightly varying seasons. Anyone who has visited many gardens can readily call to mind positions in which an Apple or a Pear, a Cherry or a Plum would have added very considerably to the existing beauties, and would, mayhap, have put that finishing touch on the whole that proclaims the artistic mind. The several Crabs are more commonly seen, but they have yet to be planted by thousands before they have received the notice to which their merits justly entitle them.

Closely related to the trees that have been briefly alluded to in the foregoing paragraphs, but differing from them in the fact they are essentially flower producers, we have the *Prunus*, *Pyrus*, and *Cerasus*. At the moment of writing these in some districts at any rate, are most strikingly handsome and adorn our gardens as nothing else possibly could do at this season of the year. That simple green for which we admire the many foliferous trees acts as a foil for the others round, and throws up their simple beauty in such a manner as to enforce not only the attention but the enthusiastic admiration of everyone. In every country garden, in every town park they may be found, but theirs is a charm that never palls, an attraction of which the eye can under no circumstances of time, or place, or quantity become fatigued. Separate the green leaves from the various coloured flowers, and the soul, as it were, of the picture would be gone. To venture to give names would be an error of judgment, as it is not now proposed to copy the catalogue, but to enter a plea for genera which, if they have not been really neglected, have had that scant attention that is almost condemnatory in its faint praise.

Of a nobler type are the *Magnolias*, and of a constitution that renders them more aristocratic and less amenable to plebeian tastes. It is not everyone who can have a grand tree of *Magnolia conspicua* in their gardens, or even the more modest growing, though not less beautiful, *M. stellata*. Of the first named, or to give it a popular name, the Yulan, there are a few superb specimens here and there in gardens, but there might with advantage be many more. Unfortunately neither the type nor its varieties thrives in every garden. Then there are *M. Lenné*, *M. Soulangeana*, and *M. purpurea*, of which any or all will add to the charm of a garden, no matter how diversified, that does not already contain them.

Where is the garden that can afford to dispense with the *Laburnum*? A common tree this, but one that is without a rival in the production of superb racemes of yellow flowers. Varieties are fairly numerous, but general opinion it is safe to assert will favour the Scotch form—*C. alpinus*—whose flowers are superior in colour and form to the others. A specimen of the Snowy *Mespilus*, *Amelanchier Botryapium*, in a neighbouring garden, charmed the writer a day or two ago as being one of the finest seen in a not limited acquaintance of gardening and gardens. It was such a picture that words are quite inadequate to do justice to it. Would that it grew equally as well in every garden. Thorns, too, must not be forgotten, as they are very handsome, particularly, perhaps, when planted in clumps. The older varieties seem to be, in many districts, part and parcel of the landscape, and it is difficult to picture what some park land would be like without them. Though the older varieties in their very age have the advantage of the more modern introductions, they cannot compare with them in the excellence and the colour of the flower, and time alone will remedy the defect of size.

The Rose *Acacia*, which it will be remembered was illustrated in the *Journal* for March 8th last, is a tree that will always be regarded with admiration by many people who rightly look upon it as being practically indispensable in the pleasure grounds. *Robinia hispida*, to accord it its botanic appellation, with its racemes of rose pink flowers, is decidedly ornamental and useful, and practically the same can be affirmed of *R. hispida*. Reference was made in the opening paragraph of these notes to the astonishingly rapid growth made by the Chestnuts a few days ago, and they are again adverted to as being amongst the noblest of our specimen flowering trees. Then, too, they make magnificent avenues, but in either case they require an abundance of room if they are to show themselves to the best advantage. Limes, if a bee-keeper were wielding the pen, would probably have been placed first, on account of their value as honey and pollen producers, are trees that require plenty of space when they are singularly attractive. The Judas Tree, *Cercis siliquastrum*, must be regarded as a neglected tree that ought to be brought prominently forward. It is strikingly handsome when in flower, and is not rivalled by any other tree in the colour of its flowers, which is purple. These, by the way, are produced direct from the branches in a decidedly peculiar, but still pleasing manner.

If a writer ventured to omit from such an article as this the *Catalpas*, he would probably bring down upon himself the wrath of the London readers of the *Journal of Horticulture*, who are deservedly proud of the specimens in the gardens of the House of Parliament. These are magnificent trees, whether they are regarded for their foliage or their flowers or both, and it is a little surprising that they are not more commonly seen. Possibly every passer-by does not know that the trees he so admires beneath the shadow of Big Ben are *Catalpas*. The Tulip Tree, *Liriodendron tulipifera*, too, finds many admirers, but its beauty lies rather in its leaves than in its flowers. If the correspondent's suggestion (page 102) is adopted the Tulip Tree will perhaps be growing in all our streets during the next generation. It is time, however, to cease writing for the present, and if trees of undoubted beauty have been omitted it remains with other writers to make good the deficiency for the benefit of their fellow readers.—F. ROWE.



A New Daffodil.—At the recent spring show, which was held in Ballsbridge under the auspices of the Royal Dublin Society, Messrs. Hogg & Robertson, Dublin, displayed a few blooms of their new Daffodil Cloncurry. The perianth segments are curious; three of them are twisted, and the remaining ones broad and flat, the tortuous ones are likewise narrow. The large cup is a deep orange scarlet. Rumour places the honour of raising this variety to the late Mrs. Lawrenson of Salerno, Killiney.—A. O'N.

Acacia lophantha.—*Apropos* of your reply to "Miss," respecting the hardiness of *Acacia lophantha*, I cannot from my own experience regard it as hardy. On the contrary, when situated in Kildare a number of seedlings was raised annually for planting out in a sheltered nook devoted to subtropical gardening, and although these compared favourably with the usual bedding plants by withstanding early frosts, they invariably succumbed to even a fairly mild winter. As a decorative plant for house work it was at that time much used, but owing to closing up its foliage at night, and its appearance under artificial light, it was eventually discarded for *Jacaranda mimosæfolia*, a plant something similar in appearance but far superior to the *Acacia lophantha* has certainly an elegance peculiarly its own, but it quickly develops into a coarse habited plant under glass. It may also be remarked that its roots emit an offensive odour, very noticeable when the plant is turned out for potting.—K.

Prunus Amygdalus persicoides.—Of the many forms of the Almond which are cultivated for the sake of their flowers, this is perhaps the best for all-round purposes. It forms a well-shaped tree 15 to 20 feet high, of a rather stricter habit than the type. The flowers, which open in March, are of a deep rosy pink, and are freely produced on every part of the tree. It is extremely probable that this is the same plant as that which was described nearly fifty years ago as the Peach Almond, a supposed cross between the Peach and the Almond, and which was said to produce two kinds of fruit on the same tree, and sometimes on the same branch, one of which was fleshy and succulent like a Peach, but bitter; and the other hard and dry like the Almond, but both containing a stone with a fairly sweet kernel. As the plant which is the subject of this note does not fruit in this country, it has been impossible up to the present to exactly verify this; but whether a hybrid or no, it is a plant which is worthy of a place in any garden for the beauty and freedom of its flowers. It is propagated by budding or grafting on the common Almond.—J.

Town Front Flower Gardens.—To the credit of the present Mayor of Kingston-on-Thames, Alderman Moatt, is it due the fact that rather than spend money on food and wine he has instituted this year a front flower garden competition in the borough, finding the prize money himself. He is aided by Mr. A. Dean, who prepared the schedule, some members of the corporation and of the Chrysanthemum Society constituting the committee, with Councillor Thyne as secretary. The Mayor's object is to encourage flower gardening in the hundreds of forecourts of the streets, and thus help to beautify the town. As these forecourts vary in dimensions, though none are large, three classes have been formed—viz., those of 1 rod in extent, half a rod, and a quarter of a rod. There is also a further class for front window or house decoration. In all these classes the houses must not be rated over £20, so as to keep out the villas, which are outside the Mayor's intentions. It is also made conditional that no hired labour be employed in the planting or keeping of the gardens. Five prizes are given in each class, and they range from 20s. down to 4s., making up a total of £9 12s. 6d. A farther class is for workmen's allotments held under the corporation on the Fair Ground, five prizes being given in this case also. It is one of the unfortunate features in the allotments that because a statute fair is held on the ground in November the crops are of no value for the winter, having to be removed or destroyed. A good group of allotments that have permanence for the occupiers is badly needed in the town, but land is scarce, and building is proceeding rapidly in all directions.—OBSERVER.

A Warm Bath for Phylloxera.—A correspondent on page 351 tells us that "washing Vine roots with water at 110° will disinfect them from phylloxera." If he means by that the pest will be killed he has had a tenderer variety of it than the sample I had to deal with. In a very bad attack of the enemy, dipping the roots in warm water had no effect; but by letting them remain for a day in water, warm or cold, the lice appeared to succumb—were, in fact, drowned. Simply washing or watering the roots with water at 110° would be as likely to make phylloxera comfortable by a soothing bath as to rid the roots of the destructive parasite. Ammoniacal liquor, or gas water diluted with five volumes of clear water, was bad for the Vine louse and good for the Vines.—A VICTIM.

Planting Vines.—No doubt the practice described by "G. A." of washing all the soil from Vine roots, and spreading them out in the orthodox way has answered very well with him and other planters. A few years ago when planting a large vinery, a discussion was being conducted in the *Journal of Horticulture* on different modes of procedure. Reflecting that I had shifted fruiting Vines from 12-inch into 18-inch pots, and noted the advantage of it, I transferred a few Vines much in the same way to a border. The drainage was removed and some of the roots disentangled, also all loose surface soil cleared away, but the great mass of soil and the bulk of the roots were undisturbed. The growth these Vines made excelled those treated as described by "G. A.," and gave better crops earlier, without revealing any signs of weakness in subsequent years.—J. WATSON.

Phlox divaricata.—"F. R." speaks in terms of high approval of *Phlox canadensis* on page 351 last week. His description of the flowers—"bluish lilac of a shining hue"—would apply equally to *P. divaricata*. This North American species is, so far as I have seen, and I have seen many, one of the finest spring flowering Phloxes in cultivation. The plants are not creeping in habit, but the stems, about a foot high, more or less erect, and in the aggregate forming perfect bouquets of well-formed flowers of the colour above described. I think I have read of this Phlox being extensively employed at Belvoir Castle, which is famed for spring gardening. Since writing the foregoing I have referred to "Johnson's Gardeners' Dictionary," and gather that the proper name for *P. canadensis* is *divaricata*. When planted too late in the spring uniformly satisfactory results are not obtained.—R. HILL.

Forced Stocks in Spring.—At the present time few flowers are more appreciated than the delicately scented Ten-week or other forcing varieties of garden Stocks. Princess Alice for cutting purposes can scarcely be surpassed, and in vases of a suitable kind they are very effective as well as agreeable in dwelling rooms. One great point in favour of these Stocks is their adaptability for growing in small pots. Large 60-pots furnish capital plants and blooms quite as large as those growing in others up to 6-inch sizes. They are of easy culture, and anyone having a cold pit and greenhouse may grow them. Seeds are sown in June and July, so as to give a succession of bloom, and until the winter is advanced frame room only is given, as this insures dwarf, sturdy growth. They, however, endure gentle forcing well, and by these means an earlier and continuous display is maintained. There are other varieties probably as good as these, one particularly good Wall-flower-leaved I have seen, but whose name I cannot remember.—R. A.

Daffodils in Shrubbery Borders.—Where sufficient margin can be provided these make a beautiful display during the spring months, but in dealing with them I observe that they thrive much better in sunny positions than where they are shaded by dense shrubs or overhanging trees. There is no comparison between those grown in our garden in shade and sunshine. I refer more particularly to the variety *N. telamonius plenus*, for while others are planted in varying numbers, including the bright *N. trumpet major*, the double variety has the greater space devoted to it. In the open where the full benefit of sunshine is felt, and in soil enriched with decayed tree leaves, these are magnificent both in size and depth of colour. A background of shrubs affords excellent relief, and when the Daffodils have attained to strong masses are gorgeous in the extreme. Those having pots of forced roots may do well to plant them without disturbance in out of the way corners, where with light and suitable soil they will give telling bits of colour in spring; if not in the next year, they will in others to follow. They can either be planted now or in a dormant state in the autumn. From newly imported roots an immediate return is given, and once established they do not require disturbing for a few years, or until they have become too dense and overcrowded to give fine blooms. The finest flowers no doubt come from roots thinly disposed.—W. S.

The Royal Horticultural Society.

The Temple Flower Show, May 23rd, 24th, and 25th.

For the thirteenth year in succession the Royal Horticultural Society will hold its great annual flower show in the Inner Temple Gardens (by the kind permission of the treasurer and benchers) on May 23rd, 24th, and 25th.

Every year the desire of growers to exhibit increases, and the officials of the society have a very anxious task in endeavouring to do justice to those growers who regularly support the fortnightly shows of the society held at the Drill Hall, and yet at the same time to encourage others also to come forward.

The space is absolutely limited by order of the Temple authorities; no more or larger tents may be erected, hence every new exhibitor whose entry is accepted means curtailment of the space allotted to previous supporters.

A catalogue of the show is given gratis to every visitor, and will contain a notice of new and rare plants entered on or before May 15th; it will also contain a programme of the music to be performed each day by the band of her Majesty's Royal Horse Guards (Blues).

The judges will meet at the secretary's tent at 10.30 A.M. on May 23rd, at which hour punctually the tents will be cleared of all exhibitors and their assistants.

The Fruit, Floral, and Orchid Committees will assemble at the secretary's tent at 11 A.M. sharp, and the show will be opened at 12.30.

All plants for certificate must be entered on or before Friday, May 18th, addressed—The Secretary, R.H.S., 117, Victoria Street, S.W. They cannot be entered under any circumstances on the day of the show.

Scientific Committee, April 24th.

Present: Dr. Maxwell T. Masters (in the chair); Mr. W. Bateson, F.R.S.; Rev. W. Wilks, Prof. Church, Dr. Müller, and Mr. McLachlan.

Ash-shoots barked by hornets.—Mr. McLachlan exhibited growing shoots completely ringed by the hornets. This is apparently a rare occurrence, but the chairman recorded a similar instance which had come under his notice in Messrs. Lee's nursery at Isleworth many years ago.

Fasciated roots of Aloe sp.—From Mr. Justus Corderoy came specimens of pot-bound Aloe-roots, some of which were markedly fasciated. Fasciation so common in stems is very rare in roots, only two or three instances being recorded—viz., in Spiraeas, and in some epiphytal Orchids.

Umbellate Primrose.—Mr. Arthur Sutton sent a flower of this variety, at one time confused with the Oxlip.

Evolution Committee.—Mr. Bateson attended as a delegate from the Royal Society to bring before the members of the committee some explanations of the kind of work which it was hoped some cultivators might be disposed to undertake, with a view to the accurate observation, and, where possible, measurement of variations in the plants under their care. A raiser of Chinese Primroses, for instance, might keep under observation all the variations that arise, measure and draw or photograph them before throwing them away, so that we should have some record of the intermediate stages between the original forms and the variety thought worthy of perpetuation.

The Views of Experts on Limpsfield.

Mr. Edwin Beckett.

I VISITED the above site on Wednesday, April 18th, as requested in company with Messrs. Bunyard, Paul, and Poupert. We carefully investigated the site, and I beg respectfully to submit my report on same.

Arable field marked on plan 344. Test hole No. 1, a good depth of heavy loam, resting on strong sandy clay subsoil. No. 2, test hole ditto ditto, position south and south-west, protected from north and east, unquestionably very suitable for Strawberry culture. Field marked on plan No. 343, sloping to south-west, test hole practically the same as the last.

Field No. 323, facing south. Test hole No. 4, slightly lighter and better depth of surface soil. A small portion of this field is water-logged owing to the water courses being blocked.

Field No. 342, grass pasture, south aspect. No. 5 test hole. A similar kind of soil to the last and also badly drained.

Field No. 324, grass pasture, sloping to south-west. No. 6 test hole. Fully a foot of surface, strong loam of good quality, subsoil sandy clay. We tested this field at four stations and found it to be all of about the same quality.

Field No. 310, now cultivated as a Hop garden on southern slope. Test hole No. 7. Excellent depth of surface soil of a much lighter quality. Test hole No. 8. About same nature as foregoing.

Field No. 311, arable, good light sandy loam resting on rock, falling rapidly to south-west; about half-way down a better depth of soil and of superior quality.

In my opinion nearly the whole of the land requires to be thoroughly drained. No difficulty should be found in carrying this out, as the lie of the land lends itself admirably for this purpose. Most of the land also is in a very poor condition, and would require thorough cultivation and manuring. The variety of soils and positions would make the site an admirable one for an experimental garden. The whole of it is particularly well situated and protected from north and east winds, and hardly any fruits, flowers, or vegetables should fail to do well upon it, Rhododendrons, perhaps, excepted.

I consider it an ideal soil for all kinds of vegetables, and apparently a good supply of water could be stored, and a delightful bog and water garden might be formed. The climate appears to be all one could wish, and the site could be made both interesting and beautiful.

Mr. George Bunyard, V.M.H.

THE upper portion of the farm is some 400 feet above the sea, and falls gradually to some 300 feet, the whole (speaking generally) having a most desirable exposure to the south. The estate is naturally sheltered from the north and east by the adjacent hills and woodland, and the spinneys and tall hedges provide all the shelter required for fruit and vegetable crops. I took notes of the soil in about eighteen positions, but as some trials were exact duplicates I only record nine instances.

Starting at the lower end next the main road in field 341, now in Clover and seed, the soil proved to be an unctuous heavy loam, with a subsoil of pervious sandy clay, which can readily be improved by drainage. A grand position for Pear trees on Quince stock, Black Currants, and Strawberries of the latest sorts and the British Queen race.

Field 343, in Wheat, has a slight slope to the west, and is a trifle lighter in texture than 344. A grand spot for Roses.

Field 323 in grass, lies at the lowest point, and although the drains and ditches had been neglected, I found no part saturated with water, and the opening of the ditches and draining will make this a valuable plot for vegetable crops, as it contains more humus than the previous plots.

Field 342 in pasture, is very similar to 323, and only the neglect to keep the drains open causes it to be damp, as the subsoil is not impervious, and there are two outfalls for drainage with a fall of 2 feet to provide ample outlet for any winter rains. This would make a fine pinetum.

Field 324 is a fine pasture field, falling from east to west. The soil is a very rich, heavy loam, eminently suitable for fruit of all kinds, as the surface soil is deep and the subsoil is lighter than in other parts. I consider it the best field on the farm.

Field 310 is in Hops, and the necessary culture for the crop has rendered the land in good heart and condition, and I should fix on this spot for an experimental orchard or plantation. The top of this position is even better than the lower part.

Field 311A is in corn, and the upper portion is on the bedrock about 2 feet, and is of a lighter description than any yet noticed, eminently suitable for bulbs or root vegetables, as Beet, Carrots, &c., also for Nut bushes and Plums, or kidney Potatoes.

Halfway down field 311B the land becomes heavier, and is then fine retentive loam suitable for Pea and Bean trials, Apple culture, and main crop Potatoes and Strawberries.

At the base of field 311C and towards the west it becomes heavier and requires to be ameliorated by drainage, although fine land for cereal crops in its present state. There is a 2 feet fall into a ditch on the other side of the hedge ample for all drainage purposes.

Field 311 is not well farmed and will require a heavy coating of manure to bring it into full use.

The present oast house, if Hops are not continued, will make a capital fruit store on the top floor, and Potatoes and roots can be kept below.

GENERAL REMARKS.—I consider the site an ideal position for an experimental garden for horticultural purposes as there are several features which can be made the most of. For example the roadsides can be used as an arboretum (forest trees, &c.). The field 323 or 342 for a pinetum, other spots suggests a collection of flowering shrubs, a salicarium (or Willow bed) for the purposes of correcting the nomenclature of this useful family and for selecting the best Osiers for basket work, trials of suitable fancy hedge shrubs, trials of artificial manures, &c.

The water supply, rising at a fair altitude, can be utilised by gravitation for greenhouses, vineries, &c., ornamental pond for aquatics, tanks for the smaller water plants, and water for all purposes can be stored where desired.

There is an ample choice of soil for all the families of herbaceous plants. Sandstone rock at hand suitable for rockeries, alpine garden, &c., and positions for every kind of hardy fruits and vegetables. From the conditions of the old trees in the garden (uncalled for) it is evident that fruit will succeed in the district, and younger trees planted near were evidently in congenial soil drainage. A complete system of drainage will be required, and the trend of the land favours this operation, as it falls naturally to the outlet.

Mr. George Paul, V.M.H.

As requested, I inspected on Wednesday, 18th of April, the farm land at Limpsfield, by Oxted, offered to the society. My instructions, I understand, were to report upon the lay of the land, its quality, condition, and suitability for the culture of fruit, vegetables, and in my case more especially of flowers, Roses, herbaceous plants, and similar plants. Messrs. Bunyard, Ponpart, and Beckett are each sending a separate report, but there will be found much upon which after discussion and a frank interchange of opinion we were agreed.

The side is a southern slope of a continuous range of hills bearing to the east upon the lower greensand and ascending half up the hill, and thus sheltered thoroughly from the north and east by the higher position of the slope. The meadows referred to further on lie at the foot of this slope, and are consequently, as regards 323 and 342 of the ordnance survey map, the recipients of the storm water of the somewhat basinlike shape of the higher slopes. This accounts for a fact which we gathered from inquiry of the neighbouring cottagers that a part of these two fields is subject to an occasional flooding after sudden storms, but which quickly passes away (these fields having a thoroughly good outlet, now needs clearing), but which I consider as a valuable element in the estate for water supply and other purposes.

The estate is entered through two fields with long frontages to the main road across the extensive adjoining commons from Oxted station. Field 344, of many years' standing (old pasture), falling slightly to north and foot of hill. Field 343, the adjoining field. Arable, under Wheat. Frontage to road. Same fall, fairly clean, and fair crop. Field 323, adjoining field to north of 343, with entry over roadway at the east side of 343, is old pasture with a covered drain or culver to take the storm water from the other sloping basin to the outfall ditch which is by the east side of the entry road on 343. Field 342, old pasture, with a slight fall to the ditch referred to on the western side. These four fields are all more or less of one level, the flat land at the foot of the three sharp sloping fields lying above them. This soil is a heavy clayey loam of good fertility, of about 1 foot in depth, the subsoil being the sandy clay, or moist sand of this formation. I should say this portion of the estate would grow Roses freely, herbaceous plants, evergreens, and Pears and Apples amongst the larger fruits, Strawberries and bush fruits amongst the smaller fruits; and with regard to vegetables, it would be good Pea, Bean, and Broccoli soil.

The land requires draining, and had I to deal with it for practical nursery or market garden work, I should along its centre and in the lowest part of the two last named grass fields make a wide ditch or small mote, with a controllable outfall into the brook near the road, and which I understand flows into the Eden; and so I should secure a water storage supply, which could be pumped to the highest level of the estate, and so lay the whole of the experimental garden under water control. The brook which, after turning a ram for the owners of the higher land, flows through the estate might, I think, be used to lift this stored water to this highest point alluded to. Such a basin would be invaluable in a trial garden for the growth of the newer Water Lilies and other water plants. Altogether, I conclude this water supply to be of value for a garden applicable to experimental purposes.

The three additional fields are of a totally different character, they form the sloping sides of the land basin, of which the lower fields are the bottom. Field 324, old pasture in good condition, facing S.W., rising quickly some 50 feet; soil slightly lighter than the preceding fields, subsoil rather charged with the water from the upper greensand lands requires, as do also the adjoining sloping fields, good subsoil drainage; fine Strawberry and fruit land. Field 310—Arable under Hops, which are breaking strongly; the brook in question falls rapidly along its eastern side. Slope to the east rising rapidly to a level of 400 feet; the soil is somewhat lighter but of greater depth, and the subsoil is decidedly more sandy, I should consider it, as far as regards its suitability for fruit culture, as good Plum, dessert Apple, and choice Pear land. At the top of the field, lying as it does close to the stone Cherryland, I think Tea Roses, shrubs, and Conifers requiring lighter soil and hardy plants, with like requirements, should do well. Field 311—Upper part of this field light sandy loam, resting 1 foot above stone used for building.

Arable, with a fall of some 200 feet to the meadows below. A fertile lighter soil, with its different quality invaluable in such a garden. Half-way down the slope the soil changes and gradually approaches that of the lower level; it is here somewhat moist from the flow of water from the rock, but needs only drainage; this difference of soil again affords from its variety opportunities for trial of fruits in the different lighter or heavier soils. Roses would do well here, Conifers on the rock underlying other parts of the field, and it is either here, or in the exposed rock hill side by the farm house, that alpine plants could be tried.

Conclusively, I look on the soil as good sound heavy soil; the large proportion of old turf is most valuable; the sheltered positions are beneficial; its water supply valuable and available, and its difference of altitude, slopes, and variations of soil are essential for the purposes for which the garden, as an experimental garden, is required. The whole estate from its altitude is, I should imagine, above the dangers of spring frosts, but I cannot be positive as to this.

Mr. Wm. Poupart.

ACCORDING to instructions I attended on April 18th at Chartland Farm, Limpsfield, Surrey, with a view to reporting as to its adaptability for a fruit, vegetable and flower garden. I made a careful inspection with the following result:—

The farm consists of about 50 acres, and is situated in the lower and middle portion of a sharp rising valley, mostly facing the south and well protected from the north and east. It is divided into eight enclosures which I report on separately, using the numbers on ordnance survey.

No. 344.—Wheat stubble, a comparatively flat field; has about 10 inches of heavy loam on slightly sandy clay. No. 343.—Young Wheat, very slight slope to south and south-west; soil the same as in 344. I consider these two fields well adapted for the growth of most vegetables, fruit, and many flowers. No. 323.—Grass. Soil a medium loam on sandy clay. This field shows signs of wet in a portion running down the centre.

No. 342.—Grass, soil same as 323. This field is also very wet through the centre part. These two fields are the middle of the lower part of the valley, and form the natural outlet for the water from the whole. The drains appear to have been sadly neglected, in fact some have almost disappeared. I am of opinion that with good open ditches and the land well drained and cultivated these fields would make excellent garden ground. No. 324.—Grass field, sharp slope facing S.W. Soil 12 inches good loam on stiffer loam over sandy clay, this is a capital piece of land. No. 310.—Hops, slope facing S. and E., soil 12 to 15 inches good medium loam. No. 311.—Large arable field, good slope to the south, soil upper part (about half) 12 inches light sandy loam on rock, lower part little stiffer on sandy clay, about two acres of bottom corner of this field show signs of wet, could be easily drained in conjunction with 323. These two fields, 310, 311, would do well for fruit, vegetable and flower growing.

The land has been badly farmed, the drainage utterly neglected. I am of opinion that with proper attention to the drainage (the final outlet for which appears to be ample) and good cultivation the land would make a good all-round garden.

Mr. Arthur Sutton, V.M.H.

I HAVE very carefully examined the site with the plan. In view of the fact that this site is recommended by others who have seen it, I feel most reluctant to offer any adverse opinion. In the first place Oxted itself cannot be said to be inaccessible from London, as several trains make the journey in from forty-five to sixty minutes, and if any good site had offered at Oxted, it might have been as suitable a locality as many others. The case is altogether different when we find that the site itself is from two and a half to three miles from the station, and the road so hilly that a cab takes twenty five minutes to cover the distance. This alone means that every ton of building material, or coal, or coke, or manure, would cost 2s. 6d. or 3s. to cart from the station. I was nearly twenty-five minutes driving with a fairly good horse to the Charing Cross Home, and more than twenty-five minutes driving back from the southern end of the land.

But possibly this might not be considered a very serious objection if the land itself were suitable for gardening operations. It is in this connection that I feel bound to offer the very strongest protest I can against the scheme. Although the weather was wet in town, it was fine at Oxted; and apart from some rain yesterday they had but little or no rain for some weeks past; notwithstanding this, I found the whole 50 acres, except the Hop garden and the upper portion of the field adjoining (No. 311a), very wet and sodden; when after the drying winds we have had, it ought to have been in fair working order. No doubt the upper portion of field No. 311—say about 4 acres—might be worked fairly easily, and as its tilth was satisfactory, a seed bed for corn or other crops might be formed soon. All the rest, however (311 b), below the brow of the hill was a cold, heavy, sticky soil; and as the plough turned it up, the furrows had that pale yellow-and-white appearance so characteristic of unhealthy and unproductive clay land. When I mention that it is "four-horse" land, and that four horses could with difficulty draw the plough, it will be understood what I mean. The furrows turned up presented a hard, sticky surface, which it would take weeks to render fit to take any crop, and the man at plough said it always took four horses to work. The Hop garden (field No. 310) is very strong land, and may grow Hops well; but even so, it is not to be compared with the rich, deep, friable Hop soils generally found in Kent and Surrey.

The land under grass (about 17½ acres) I am confident can never be tilled except at a great loss, and certainly could never be made good garden soil. I made a close examination of each grass field. The only one with anything approaching a good turf—i.e., turf which indicated useful grasses, was No. 324. This, however, although on rising ground, was as wet as a sponge, even in its higher portions, and I consider the soil is so retentive in character that no amount of drainage would enable the finer grasses to become permanent. As it is at present, moss is found all over the field—a sure indication of excessive and stagnant moisture. Fields Nos. 323 and 342, though not now flooded, must sometimes be liable to flood. Water now stands on them in places

and several furrows in each field are full of water. So completely water-logged are these two fields that the grass has assumed a rusty brown colour, due to excess of stagnant water, and both fields, but especially No. 323, are covered in places by a growth of rushes, also due to being water-logged. The only portion of field No. 323 where the grass is fairly good is marked "C" on the plan—about three-quarters of an acre. The remaining two fields (Nos. 343 and 344) are only suitable for Wheat, and then only in a hot dry season. On No. 343 is a very thin plant of Wheat, and its thinness is due probably to the wet weather of January last. No. 344 is a Wheat stubble, exceedingly foul, and with a very scanty plant of Clover. Even if these two fields were likely to prove good garden soil, they are too far removed from the best portion of the land at the top of the hill to be conveniently tilled. As a matter of fact, the elevation of the land is such that the grass fields form a natural basin or reservoir, where the water from the surrounding hills collects, and, having no outlet, becomes stagnant and sour. From my knowledge of the value of land in other counties, I am confident that for agricultural purposes all the fields comprised in the 50 acres, with the exception of the Hop garden and the upper portion of No. 311, would be dear at anything over £35 per acre.

I understand the scheme has recently been modified, in so far that it is not now proposed that the Royal Horticultural Society should purchase the Caxton Home, or attempt the formation of any horticultural school. Were it otherwise, I should think the £3500 named as its price quite £1000 too much, whatever it may have cost to build. I have only seen two sites. Oxted is one I feel bound to oppose most strongly, whether as a member of the council or as an ordinary Fellow, and I feel sure that any expert authorities, such as the agricultural professors at Cirencester or Downton, would agree with the opinion I have given above, as would also any market gardener who cultivated for profit. If samples of soil are to be taken for analysis, I would suggest that someone conversant with the methods usually followed be employed to take the samples. Very few fields are alike in all parts, and three or four samples from each field would be needed to obtain any reliable data. Those accustomed to soil analysis would take samples from the most dissimilar portions of each field, as by this means only can a true estimate be obtained. But whatever the result of the analysis may be, the natural formation of the land at the foot of the hills, especially of the meadows, at Oxted is such that it can never become garden soil—of even fair quality.

I do not wish for a moment to place any hindrance in the way of the council in carrying out well-considered schemes, and rather than do so in the present instance would readily resign my seat. In fact, such a course seems inevitable if the council adheres to the resolutions passed on Tuesday last, unless I propose an amendment at the meeting to be held on the 25th inst., which I should be very unwilling to do. But for the importance of the matter at issue, I would sincerely apologise for presuming to occupy the time of the council with this letter, the writing of which at best is a most unpleasant duty. I am aware that as the option to purchase is for a limited time only, and a general meeting is summoned for the 25th inst., the council is placed in a somewhat difficult position. In view of the fact that it is the centenary of the society we are proposing to celebrate by a scheme which is to be permanent in character, I would suggest that two duly qualified and experienced land agents or surveyors be appointed immediately to examine the 50 acres at Oxted, and report upon the fitness or otherwise of the soil for the purposes of a Model Garden of Horticulture. The surveyor should also be instructed to determine the actual value of the land for agricultural or horticultural purposes, as it is obvious that the fancy prices obtainable for building sites on the crest of the hill are no guide whatever to the value of the 50 acres in question, all of which lie below the hill top, and afford no site for building, unless it be for a modern farmhouse, to take the place of the primitive and more or less dilapidated buildings and cottages now standing. The following land agents and surveyors are men of wide experience, and of high standing in their profession:—Messrs. Rawlence and Squarey, 15, Great George Street, Westminster, S.W.; and Messrs. Clutton, 9, Whitehall Place, S.W.

It may be technically correct to say that at the annual meeting, the Fellows, by adopting the report, committed the society to the formation of a new garden as the best means of celebrating the centenary, but if so, I am confident that few, if any, of those present thought for a moment their vote would have this result. I very much doubt whether many Fellows could be found who considered the purchase and laying out of new gardens the fittest and most useful way of celebrating so important an event. There has been very little time at recent council meetings for the discussion of the "new gardens," and perhaps this is why the council as a body are entirely in ignorance as to how these gardens, if obtained, would be worked or organised. If the new gardens were managed on similar lines to the present gardens, where the work consists chiefly of trials of at least doubtful utility, and the cultivation of large quantities of Grapes and other fruits which are marketed, I do not hesitate to say that the result would not be worth the outlay. The present Chiswick Garden costs £1400 a year to maintain, and the new one would, of course, cost double or treble this amount. I venture to think that no adequate results could be obtained from the new gardens unless placed under an experienced director equal in technical horticultural knowledge to Mr. Jas. Hudson, Mr. Owen Thomas, or Mr. G. Wythes—men who, though loyal to any expressed

wish of the council, would be sufficiently independent to initiate and carry out work which it is impossible for the council itself to find time even to suggest. It may be objected that these are matters of detail, but, unless the Fellows are assured that the council are prepared to organise the new gardens on a totally different system to that at present adopted, it is very unlikely their support can be secured. Supposing that instead of the garden it was desired to celebrate the centenary by providing a large horticultural hall, with committee rooms, offices, &c., would not the £3000 or £4000 a year, which the new gardens must in any case cost to maintain, provide the interest for the capital which might be borrowed for erecting the hall?

(1) I cannot think that the purchase of a new garden is the best means of celebrating the centenary of the society; and (2) that if any new gardens were considered necessary by the Fellows, the Oxted site is one which, in my opinion, is extremely unsuitable, and certain to involve the society in a very large outlay, for which there will be no adequate return; (3) and further that as the centenary will not take place until 1904, it is unwise to decide so hurriedly on any site at the present time.—("The Gardeners' Chronicle.")

The Promise of Spring.

A FLOOD of sunshine has recently been poured upon the land, and to its quickening influence vegetation has responded in a way which should make our hearts glad. The dark, cold days of winter, and the biting winds of early spring, are forgotten as the eye rests upon the verdant pastures, or the gay flowers and advancing crops in our gardens. Such signs of activity have been watched and waited for by young and old in our island home, but, perhaps, by none so anxiously as those gardeners who have to provide an unfailing supply of flowers, fruits, and vegetables. The long delayed supply of flowers from the open air has caused many to be at their wit's end to satisfy requirements, as the glass houses are at this season largely occupied with plants intended for the flower garden in summer; and with a good collection of herbaceous and flowering trees one can generally rely upon getting large quantities of flowers in the open air by the middle or end of March, yet this year many gardens were almost flowerless then. Fresh green vegetables have also been extremely scarce; the early Broccoli were in many instances ruined, and the later ones presented a sorry appearance, and seemed rather to grow less each day than to advance to maturity. All is, however, now changed; early Cabbages are growing apace, and what Borecole still remain begin to grow with the fresh greenery of spring.

We have now entered upon a critical season in the gardener's year; his hopes and fears during the next few weeks will be largely influenced by the state of the weather, and it is in connection with hardy fruits that we are, to the greatest extent, dependent upon the weather samples which are meted out to us. Just now the promise looks particularly bright, as fruit trees are either laden with blossom, or are showing a wonderful abundance of swelling flower buds. Seldom have I seen trees look so uniformly promising, and as the late spring has retarded the opening of the flowers, we may at least hope to be spared from ruthless frosts in May, or that they will not occur at that critical time when the blossoms are fully expanded. During my limited travels in the Midlands recently I saw several fruit plantations which looked extremely promising, the Apple trees especially so, as the leaves were just unfolding and displaying a wealth of plump flower buds. It is also encouraging to note that a considerable amount of planting has been done, and the young trees show signs of careful attention, in marked contrast to many old orchards met with. In the young plantations the thinning of the branches has been judiciously carried out, and there are evidences in many directions that the sound knowledge, which has been disseminated in many ways, is being acted upon. As one who has long been interested in fruit culture, these signs of improvement were especially welcome to me. This season should be a noted one for Gooseberries, as all the bushes I have yet seen were loaded with embryo fruits. Peaches, Apricots, and Nectarines, on south and west walls, have also set well, even in cases where no protection has been given, but those on east walls seem to have suffered severely from the cold winds. The soil has, up till now, kept uniformly moist, and I am convinced that it has greatly favoured a good set, as dryness at the root during the blossoming time is frequently the cause of a scanty crop, although it is invariably attributed to frost.

It is wonderful how quickly the soil has dried of late, and this has afforded excellent opportunities for keeping the hoe going in all departments of the garden, so as to take full advantage of sunshine by allowing it free access to the soil, where its warmth will help forward the progress already made. Gardens generally are now free from weeds, trim and neat, so that, notwithstanding the fact that the

season is late, the prospects for the coming season look bright, and work which a short time ago was sadly in arrears is well in hand, and this will help gardeners to look forward without misgiving to the busy time of the bedding-out season.

The snows, frosts, and biting winds of winter play their part in ameliorating and sweetening the soil; the fickle showers of April freshen and speed to luxuriance the tender growth of spring, raising our hopes high with the prospect of a bountiful harvest. May the year bring to the followers of our ancient art a full measure of that bright promise which stirs us to activity in the days of spring.—ONWARD.

Bulbs in Victoria Park.

It is extremely doubtful whether dwellers in the country, with its wealth of vegetation and pure, health-giving air, can realise how the parks and gardens of the metropolis are appreciated by Londoners. This is perhaps especially the case at three seasons of the year—1, when the bulbs are in flower in the beds; 2, when the summer flowers are at the zenith of their beauty; and 3, when the Chrysanthemum is the flower of the hour. At other times the parks have their thousands of visitors, but at these periods it is quite a pleasure to see the crowds round a particular bed or flower, and to hear the criticisms that are passed on the work that has been done. The latter show how deeply interested the visitor is in his flowers, and how keenly he desires his particular park to be ahead of that of his neighbour in its bulbs, summer flowers, or Chrysanthemums.

The more encouragement the London County Council can give the masses in this direction the better, as no one can doubt that flowers and their associations have an excellent effect on every mind. The district in which Victoria Park is situated is one of the most crowded and unsavoury in the metropolis, but it accommodates many thousands of horticulturists, at least one must suppose so who mingles with the crowd and hears the varied expressions of opinion. The people, as a rule, are remarkably just in the views they hold, and are equally as prompt in seizing upon a good point as on a bad one. To a large degree this faculty of intelligent criticism has been engendered by the County Council and its various superintendents, who have laboured assiduously to educate the masses up to what is permissible and what incongruous in the planting of beds with various flowers.

This season east and north-east London has had to wait a long time for the display of bulbous flowers, for which Victoria Park has become so famous of late. It must be several years since the season was so late, and certainly the bulbs have been over in some years by the present time. And yet they all came out within a week. One day there was scarcely a flower to be found, and one week later there they were in their thousands. A few days ago, when I had the pleasure of seeing them, they were probably at their best, with the exception of a few beds of Tulips, which had not then fully developed. With some of the Hyacinths it was almost a case of here to-day and gone to-morrow, so short was their reign, but in this respect the varieties differ very materially, some remaining in good condition for a much longer time. No doubt the peculiar season has had much to do with this, as until the week referred to as bringing them on with such astounding rapidity the weather had been particularly uncongenial to this, and, indeed, all forms of vegetation as well as to mankind.

Probably if a plebiscite could be taken it would be found that the most popular bed of all was one in the space near the Palm house of Narcissus Emperor. It was at the time of my visit really magnificent, and it would scarcely have been possible to find its superior in any park or garden. The popular bicolor Horsefieldi, too, was in excellent form, and as usual claims a large share of admirers. Barri conspicuus is in its way unrivalled, and it might advantageously be used with far greater freedom, both in respect of the number of beds planted and in the number of bulbs allocated to each bed. The bed observed of Sir Watkin, which many people regard as one of the finest Narcissi in cultivation, was not by any means satisfactory, the plants varying in height to a remarkable degree; the flowers again differed in size, form, and colour, and with few exceptions were not thrown up above the leafage, as is the normal habit of this noble flower. The splendid yellow maximus was in capital condition, and made itself very conspicuous.

Amongst the Hyacinths the finest bed was undoubtedly that of the King of the Blues. This is a decidedly ancient variety, but as a dark blue for bedding it is still difficult to beat. The trusses on the plants in Victoria Park were splendid. The only other Hyacinth worthy of note was Gertrude, the charming rose coloured variety, which has been familiar to flower gardeners for years. The Tulips were not, as has already been said, up to the mark, but several promised well, such for example as Van der Neer, Chrysolora, Vermilion Brilliant, Keizerskroon, Proserpine, Pottebakker White, and Rose Grisdelin. These only wanted a few more days of warm sunshine to bring all their brilliant beauty on to the scene. The whole display is fine for the season, and should prove a source of satisfaction to the council; Mr. J. W. Moorman, the superintendent; and the inhabitants of the neighbourhood.—WANDERER.

The Hailstorm Insurance Corporation.

THE fifth annual general meeting of the Nurserymen, Market Gardeners', and General Hailstorm Insurance Corporation, Limited, was held at the new offices of the corporation, 41 and 42, King Street, Covent Garden, London, on Tuesday, 24th April, 1900. Mr. H. B. May presided (in the absence of Mr. Harry J. Veitch, who was in Palestine), and there was a good attendance of shareholders. The chairman gave some interesting figures, showing the growth of the premium income and business, as follows:—

Year.	Policies in force.	Premium Income.	Square feet covered.	Value Insured.	Claims paid.
		£ s. d.		£ s. d.	£ s. d.
1895-6	235	681 1 9	10,408,161	135,215 16 0	283 17 4
1896-7	346	889 11 5	13,886,095	179,366 11 1	Nil.
1897-8	550	1360 17 0	20,098,104	263,590 19 1	1532 17 5
1898-9	749	1736 0 6	25,619,760	343,439 7 8	Nil.
1899-1900	825	1962 0 1	28,855,076	391,202 15 4	Nil.

The working expenses had been reduced from £40 10s. 3d. per cent. of the income in 1895-6 to £18 3s. 6d. per cent. in 1899-1900.

The report was unanimously agreed to, as was the recommendation of the directors, that a dividend at the rate of 5 per cent. and a bonus of 2½ per cent. per annum be paid, and that £800 be placed to the reserve fund, and the balance £375 10s. 4d. be carried forward. A further issue of 5000 shares of £5 each had been made at a premium of 4s. per share. The issue had been more than subscribed for, and applications for shares were received too late. £1 per share had been called up, received, and invested. The subscribed capital was now £50,000, and the paid up capital £10,000. The premiums on new issue had been placed to the reserve fund after deducting the cost of the new issue.

Since the financial year had closed a claim for damage to glass by hail had come from Kirkwall, Orkney Isles, and had been promptly paid.

Horticultural Shows.

National Primula and Auricula Society, Midland Section.

April 25th.

SUPPORTED by a most influential list of growers, the initial exhibition proved an encouraging success, and though not so large as the parent society's recent show held in London, several of the varieties were pronounced to be equal in quality, as instanced by the premier prize plant Mrs. Henwood, and which specimen had also taken the premier prize at the Drill Hall on the previous day by Messrs. Phillips & Taylor, Brockwell, who were also accorded chief honours for six Show Auriculas, dissimilar, with George Lightbody, Marmion, Miss Barnett, Rev. F. D. Horner, and a seedling unnamed; the second prize fell to Mr. A. R. Brown, Handsworth, and the third to Mr. W. B. Latham.

Messrs. Phillips & Taylor were first for four varieties, with Acme, Mrs. Henwood, Miss Barnett, and Shirley Hibberd; second Mr. J. Clements, Harborne; third Mr. J. Stokes, Harborne; fourth Mr. A. R. Brown, Handsworth; and fifth Mr. R. Holding, Ballsall Heath, Birmingham (the enthusiastic secretary). For two plants Mr. R. Holding and Mr. J. Stokes were placed equal first.

Single plant green edge Mr. Ben Simonite led the way with Ossian, second and third Mr. A. R. Brown, and fourth Mr. R. Holding. For a single plant grey edge Mr. A. R. Brown was first with Beauty; second Mr. W. B. Latham with Colonel Champney. Mr. A. R. Brown was placed first in the white edge class with Acme, and Mr. J. Stokes third. In the self class, which was well contested, Mr. J. Clements was first with John Spalding and Gerald; second Mr. A. R. Brown with John Spalding and Mrs. Potts; third Mr. A. R. Brown; fourth Mr. R. Holding; and fifth Mr. F. T. Poulson, Stafford.

Alpines were exceedingly good, and for six Mr. A. R. Brown was placed first with Dean Hole, Mrs. Gorton, Thetis, Mr. Martin Smith, R. Gorton, and J. F. Kew; second Messrs. Phillips & Taylor; third Mr. R. Gorton; fourth Mr. R. Holding, and fifth Mr. J. Clements. For four plants Messrs. Phillips & Taylor, A. R. Brown, R. Holding, R. Gorton, Eccles, and J. Clements were placed as in order named. For two plants Mr. W. H. Twist, Curall Heath, was placed first; Mr. W. W. Cheshire, Edgbaston, second; Mr. Poulson third. For a single plant with gold centre Messrs. R. Gorton, H. R. Brown, Phillips & Taylor, J. Clements, and W. W. Cheshire were the respective winners. For a single plant, light centre, the first and third prizes fell to Mr. A. R. Brown, the second and fourth to Mr. R. Holding, and the fifth to Mr. J. Clements. In the premier Alpine class Messrs. Phillips & Taylor were assigned the prize. For a pair of Alpines (for maiden growers) Mr. W. W. Cheshire and Mr. F. T. Poulson were the winners.

Polyanthuses were sparingly shown. For four plants, gold laced varieties, Messrs. Pope & Sons were the only exhibitors. For a group of Primulas or Auriculas Messrs. Pope & Sons were to the fore, with Mr. J. Clements second, and Mr. R. Holding third.

The Midland Daffodil Society.

April 25th.

FAIR as was the initial show held last year at the Edgbaston Botanical Gardens, the recent event surpassed it both in size and the general quality of the blooms. Several excellent seedlings came from Miss Willmott of Great Warley; Mons. R. Van der Schoot & Sons, Hillegom; and Mons. J. de Groot & Sons. Silver medals were awarded to two exquisite seedlings of Miss Willmott's—viz., Countess Grey and Mrs. Berkeley. A similar honour was bestowed upon Chaffinch, exhibited by P. D. Williams, Esq., St. Keverne, Cornwall. A special certificate was also awarded by the committee to Queen Wilhelmina, from Mons. J. de Groot & Sons.

The trade, as usual, made a brave display, and silver medals and special certificates were severally accorded to Messrs. Barr & Sons, London; Dickson, Ltd., Chester; Hogg & Robertson, Dublin; Thos. S. Ware, Ltd., Feltham; R. Sydenham, Birmingham; J. R. Pearson and Sons, Chilwell; R. H. Bath, Ltd., Wisbech; Pope & Sons, Birmingham; and Hewitt & Co., Birmingham.

The following is the prize list:—For a collection of Daffodils, fifty varieties (exclusive of the Polyanthus section), the first prize, silver cup, was worthily awarded to Mr. R. O. Backhouse, Hereford; second to Mr. P. D. Williams, St. Austell, Keverne; third, Rev. J. Jacob, Whitechurch, Salop; and fourth, Mr. W. A. Caldecott, Coventry. For twelve distinct true trumpets the premier honour was conferred upon Miss F. W. Currey, Lismore, Ireland; second, Mr. W. J. Grant, Newport, Mon; third, Mr. H. B. Young, Methorthingham, Lincoln; fourth, Miss M. B. Crawford, Ardlamont, N.B.; and fifth, Miss Mabel B. Crawford, was again successful. For six varieties (trumpets) Mr. A. Cryer, gardener to J. A. Kenrick, Esq., Edgbaston, was placed first; while Mr. Leonard of Brentwood, and the Rev. G. F. Eyre, Bowdley, were accorded equal second; fourth, Mr. C. Dawson, Penzance; and fifth, the Bishop of Worcester, Hartlebury Castle.

For twelve varieties Medio-Coronati, Miss F. W. Currey was again to the fore with excellent blooms; second, Mr. H. B. Young; third, Mr. W. J. Grant. For six Mr. Leonard Brown, the only exhibitor, was awarded the first prize. For six varieties Parvi-Coronati, Miss F. W. Currey and Mr. H. B. Young were placed equal first; third, Mr. C. Dawson; fourth, Mr. C. Dawson and Messrs. Pope and Sons, equal. For twelve varieties Narcissi the first prize was awarded to Mr. A. J. Styles, Spalding; second, Mr. R. C. Bick, gardener to Walter Chamberlain, Esq., Harborne Hall, Harborne, Birmingham; third, Mr. W. B. Latham; and fourth, Mr. J. Mallender, Worksop. For six the first prize was given to Mr. C. R. Bick for remarkably fine examples; second, Mr. H. J. Stiles; and third, Mr. J. Mallender.

For six vases of Spanish Irises the first prize went to Mr. R. Sydenham, the only exhibitor, with bright examples. Daffodils in pots were very well represented, but the Polyanthus section was only of medium quality, the chief exhibitors being Messrs. Cryer, Isaac Cooke, Robert Sydenham, J. Sceaney, Harborne; and E. M. Sharp, Edgbaston. Tulips were exceedingly well shown, and for six pots of single flowers Messrs. R. Sydenham, A. Cryer, and J. Sceaney were the prizetakers in the order named. Fine examples of Lily of the Valley were in evidence, and the prizes fell respectively to Messrs. I. Cooke and A. Cryer; Cyclamens were also well shown by Mr. F. Impnoy, Northfield, and Mr. C. L. Bronson, Coleshill; Cinerarias were fairly well staged by Messrs. A. Cryer, I. Cooke, and Mr. Musten, gardener to H. F. Bird, Esq., Moseley; Lilium Harrisii made an attractive show by Messrs. I. Cooke and A. Cryer.

Table decorations formed a very attractive feature, Messrs. John Pope & Sons, I. Cooke, and Musten being the winners with elegant designs, composed of Daffodils and ornamental foliage. Groups of spring flowers were nicely shown by Messrs. A. Cryer, Musten, and Rev. J. Jacob. For a bouquet of Daffodils Messrs. Pope & Sons were to the fore with a most elegant example, and Mr. A. Cryer excelled himself with a somewhat similar arrangement. Bowls of cut Daffodils made a striking feature, the best coming from Mr. A. Cryer, W. J. Grant, and Miss Rosie Sydenham. For a group of cut Daffodils the Rev. J. Jacob, and Messrs. I. Cooke and Musten were the winners. For three jars of Polyanthus Narcissus Messrs. I. Cooke and E. M. Sharp were placed as named. For three pairs Daffodils Messrs. A. Cryer, I. Cooke, J. Sceaney, and E. M. Sharp were placed in order named. For a box of cut Daffodils Messrs. J. Manger & Sons, Guernsey, were awarded the first prize; Mr. J. T. White, Spalding, the second, and Mr. I. Cooke the third.

The Young Gardeners' Domain.

Forcing Peaches and Nectarines.

CONTINUING my remarks on the above subject, from page 274, I should like to emphasise the necessity for early disbudding. Nothing appears to me to be gained by allowing the development of useless shoots, which exhaust the food reserves. They should, therefore, be removed early, that those which remain may have all the support

possible to lay the foundation for the production of an abundance of bloom buds and fruit for the following season. Disbudding must therefore commence before the buds have expanded into leaf, subsequently removing those that remain at intervals of three or four days. If the tree has covered the space allotted to it, one shoot at the base and another at the apex of last season's growth will be sufficient. Overcrowding of the shoots should be avoided, so that when fully developed sun and air may have free access to all parts.

In numbers of cases many more fruits will be set than are required, and it will be necessary to thin them. First remove those that are not in a good position, continuing gradually with the worst fruits until only the desired number of the best placed and most promising remain; the last thinning should take place when the fruits are about the size of Walnuts. The crop of fruit which a tree can perfect depends on its health and vigour, and also on the variety. The Nectarine will bring to perfection more fruits than the Peach; careful forethought should therefore be given to the subject, so that each tree may be cropped according to its ability.

During the stoning period care should be taken that the trees do not receive any check, either by sudden fluctuations of the temperature or over-dryness at the roots. An equable temperature and a genial atmosphere must be maintained. Keep the foliage clean by forcibly syringing the trees on fine days with the hand pump or syringe, and examine the borders frequently to ascertain their condition, and whenever water is needed give sufficient to thoroughly moisten the whole to the drainage. When the fruits commence the final swelling the minimum night temperature should be 60°. Dispose the shoots evenly over the space at command, and secure them to the trellis in such a manner as to leave the fruits exposed to the light as much as possible.

When the fruits commence to ripen syringing should be discontinued, and a free circulation of air maintained both night and day. Fresh, pure air and full sun are important factors in the production of fruit of high quality and good colour. Examine the trees daily, and carefully remove fruit sufficiently ripe. When the crop is gathered the house must be freely ventilated, and the trees well washed occasionally to free them from red spider, which may have made its appearance. The old wood that has borne fruit, and any shoots not required, should be cut out to admit all the light possible, in order that the young wood may be thoroughly solidified and matured. If the roof-lights are movable they may be taken off with advantage when the leaves have fallen, or in the case of early forced trees when the wood is well ripened and the buds plump. If they cannot be removed the ventilators should be open continually, and the house kept as cool as possible.—S. P.



Fruit Forcing.

Vines.—*Early Houses.*—Vines started at the new year have the Grapes in an advanced stage for ripening; indeed, some are commencing to colour, and will need a circulation of warm rather dry air. It is imperative to keep the foliage clean and healthy for as long a period as possible. Where red spider has obtained a hold, prompt measures must be adopted for its destruction.

Houses of Ripe Grapes.—Early Vines that have ripened their crops require a circulation of air, and the temperature should fall to 60° at night. The soil must be kept moist, so as to keep the foliage in good condition. Moderate air moisture also is essential to prevent the foliage prematurely ripening, and it benefits rather than prejudices the keeping of the Grapes, provided the atmosphere is not stagnant. The Grapes are liable to lose colour with hanging; a slight shade will be beneficial in helping to keep colour, especially in Black Hamburgs and Madresfield Court. It is also desirable, where it can be practised without crowding the principal leaves, to allow a moderate extension of the laterals.

Muscats.—The Vines started in December to afford a supply of ripe fruit early in June are now beginning to colour. Muscat of Alexandria takes longer to colour than Muscat Hamburg and Madresfield Court. The Grapes of the former variety are liable to shrivel unless the Vines are well supplied with water and nourishment at the roots. When these are provided judiciously a much drier condition of the atmosphere may be allowed than is otherwise safe, and this is essential to good finish in Muscats. Directly the Grapes change colour give a thorough supply of water or liquid manure, following with a mulch of rather strawy material. As a safeguard against scorching, to which Muscat of Alexandria is subject, a slight shade should be provided, ventilating early, and increasing the air with the advancing sun heat, but allowing a high temperature by that means.

Muscats in flower set freely with a night temperature of 70°, 75° by

day, and 80° to 85°, or 90° with sun heat, always with a circulation of air. The points of the bunches should be kept well up to the light. When the cups of the flowers are being cast off it is advisable to rap the bunches lightly, better still to gently go over each with a camel's-hair brush, and follow soon afterwards, or when the caps are off, with another brush loaded with pollen taken from free-setting varieties, such as Alicante and Black Hamburgh. The influence of foreign pollen is far more potent, and secures finer berries than impregnation of a variety of Grape or other fruit with its own pollen, which is often inert.

Succession Houses.—Follow up thinning the bunches and berries, also tying, disbudding, stopping, and regulating the growths. Allow crops proportionate to the vigour of the Vines, and retain as much foliage as can have full exposure to light. Examine the borders at least once weekly, and when dry water freely, assisting those in full foliage and carrying heavy crops with tepid liquid manure and surface mulchings of rich material. In addition to this some fertiliser should be used.

Outside borders will not require any water unless there be a deficiency of moisture, then supply it liberally, and to encourage surface roots top-dress with some fertiliser, also mulch lightly if the border has not a good tilth of fine surface soil so as to retain moisture. Ventilate early, it causes accumulated moisture to disperse, gives texture to the foliage and firmness to the wood. Allow a high day temperature from sun heat, closing early, alike to push ahead the crop and to store the sun-warmed atmosphere. At night a rather low (60° to 65°) temperature is best, especially for Vines carrying heavy crops.

Late Houses.—Disbudding, also tying and stopping the growths, must be attended to as they become sufficiently advanced. The bright weather has given the foliage a remarkably healthy blue colour. Every advantage should be taken of sun heat to increase the ventilation early in the day, and of closing early in the afternoon, as a means of securing a long day's work, and of vigour and health in the Vines, dispensing with fire heat as much as possible, yet employing enough to keep the Vines in steady progress. Make a selection of the bunches that are to remain for the crop, large bunches, especially loose, being the worst for finish, and the medium-sized and compact the best. Crop lightly rather than heavily, and apportion the crop to the vigour and variety of Vine.

Late Hamburghs.—Disbud, tie down, and regulate the growths, not leaving more than can have space for the full expansion of the foliage. In stopping allow two at least, preferably four, joints of growth beyond the stem for show of fruit, and pinch the laterals below to one joint as made, but above the bunch allow them to extend, so as to insure an even covering of the space with foliage that can have full exposure; afterwards keep them pinched to one leaf as growth is made. Where the space is restricted closer stopping may be practised, not allowing the laterals to interfere with the principal leaves. Ventilate early and freely, so as to insure short-jointed wood and stout foliage. Avoid a saturated condition of the atmosphere, yet a genial state must be provided by syringing the borders, walls, and paths in the morning and at closing time, and secure proper moisture in the borders. A sprinkling of some approved fertiliser after each watering will be found advantageous.

The Kitchen Garden.

Beans.—Where Broad Beans are in demand till comparatively late in the season another two or three sowings may yet be made. Give the preference to the true broad podded section, notably the Green Windsor, and sow on rich cool ground. Broad Beans transplant readily, and if from any cause the early rows present a somewhat patchy appearance, one good row may be formed out of two poor ones by carefully lifting and replanting.

Runner Beans may now be sown in the warmer localities, but it is yet a little too early to sow seed in low-lying, damp positions. If the seed is sown in double drills 12 inches apart, and it is intended to use tall stakes to cross over the rows, these double rows may well be disposed 8 feet apart, with three rows of early Potatoes or Cauliflowers between them. Single lines of Beans that are to have 6 feet stakes may be disposed 6 feet apart, and have two rows of Potatoes, Cauliflowers, or Cabbages between them. Where it is intended to dispense with stakes altogether, the plants being kept closely topped market growers' fashion, the rows may be disposed 3 feet apart with one row of Potatoes or other quick maturing crop between. In each case avoid sowing too thickly, crowded Bean plants failing to bear pods so continuously as desirable. If extra early Runner Beans are wanted, raise the requisite number of plants singly in 3-inch or slightly larger pots under glass, hardening and planting out before they become much root-bound, and protecting with mats or canvas.

Celery Trenches.—According, as the ground is cleared of Broccoli, Borecole, Brussels Sprouts, and the like, good opportunities are offered for getting the Celery trenches prepared. Preparing the trenches is desirable for several reasons. If delayed till near planting time the ground is usually drier, harder, and much more difficult to get into a condition suitable for the reception of the plants. Early preparation also admits of the spaces between the trenches being most profitably cropped with Kidney Beans and Lettuces. Trenches to hold a single

row of plants may be 15 inches wide with 3 feet or 4 feet spaces between, while for double rows of plants a width of 18 inches is none too much, the spaces between being not less than 4 feet. The best of the top spit only should be thrown out of the trenches and disposed evenly on each side, as very deep trenches are a mistake. In the bottom of the trench dispose 6 inches of good, partially decayed, manure, mixing it somewhat with the soil by means of a fork.

Ridge Cucumbers.—If only a few plants of these are grown they may be raised singly in 3-inch pots in gentle heat, hardening and planting out on prepared ridges towards the end of May. Too often the plants are raised long before the proper time for planting out has arrived, with the consequence that a very bad start is made. Stunted yellow plants had better be thrown away and more seed be sown, the first fortnight in May being quite early enough to sow if little or no protection can be afforded the plants when turned out.

Vegetable Marrows.—Much that has been advanced concerning ridge Cucumbers also applies to Vegetable Marrows. If an early crop is desired a mild hotbed should be prepared at once, if not already done, on this disposing hand-lights, or better still frames. Plant directly the mound of loamy soil placed for the plants is warmed through, and keep them under cover till such time as they need much more space to ramble over. The bush varieties are usually the first to produce crops, and these are well adapted for frame culture, also for interspersing among the running varieties in the open.

Spinach.—During the hottest part of the summer Spinach is seldom obtainable. It can be had moderately late by sowing the Victoria or Longstanding on a cool well-enriched border, and a fairly good substitute may be found in the so-called New Zealand Spinach. A dozen or so plants of the latter will meet the demands of most establishments. Raise these now in heat, and early in June plant out of 3-inch pots on a sunny border singly 3 feet apart each way. They will rapidly attain to a great size, the short tops being gathered and cooked.

Spinach Beet.—In many gardens considerable difficulty is often experienced in providing abundance of Spinach during the winter and early spring months. A substitute is available in the form of large Spinach-like leaves produced by Spinach Beet. The seed of this should be sown at once in drills 12 inches apart, thinning the plants to about 6 inches asunder. Frosts rarely if ever destroy this Beet, and the roots produce a profusion of leaves which good cooks can render fit for the table, serving similar to true Spinach.

THE BEE-KEEPER.

The Weather.

THREE successive bright sunny days, with a shade temperature ranging from 70° to 80°, have had a beneficial effect on the bees. Strong colonies have increased rapidly, and stocks that were considered weak have now several frames well filled with brood. The effect on vegetation is most marked. A week ago the pastures were brown and the trees bare, and with the exception of the early spring flowers few blossoms were visible; but now all this is changed, the pastures are green, but studded with thousands of flower; Plums, Almonds, Gooseberries, and Currants are wreathed with their fast-opening blossoms, and in a few days there will be a wealth of bloom on the Apples and Pears. Already, however, there is a change in the weather, the temperature is lower and rain threatens; a few warm showers would do a great amount of good.

Bee-keepers must be on the alert and not allow their bees to suffer from lack of stores. Pollen has been carried in freely; and breeding has been going on a rapid rate; but should dull weather ensue for a few days breeding will cease, as the queen will discontinue laying if the food supply is restricted. It is false economy to leave the bees to chance at this season and failure is much more likely to take place after a short spell of hot weather than if the weather had remained dull and cold. Feeding should be continued as advised in previous notes, and the bees must not be disturbed more than necessary. We still continue open air feeding, and find it a success. Although the weather may be dull it is not often at this season that the temperature is so low during the middle of the day but that some of the workers are able to leave their hive. If they have been regularly fed in the open they at once go to the feeders and take the warm syrup that has been provided for them.

Spring Dwindling.

In the best managed apiaries spring dwindling will sometimes take place. But it is the bee-keepers who leave their bees to take their chance who suffer most. It will arise from a variety of causes. Dampness in the hives, insufficient coverings, shortness of stores, and late feeding the previous autumn will cause it. The cure is a warm dry hive; the bees should be restricted to just as many combs as they can well cover. This is done by drawing the division board close up

to the frames, and if it does not fit closely to the sides and bottom of the hive the space at the back may be filled with any old coverings so as to keep the bees as warm as possible.

A stock of this description should always be fed with a slow feeder; there will then be no escape of heat from the hive. An extra frame may be given as required, and it is surprising how rapidly a weak stock will improve if worked on the above lines. Instead of the bees dropping from the cluster through weakness, to be afterwards found on the floor board dead, they become lively, and will work freely as the weather becomes warmer.

Many bee-keepers cannot understand the reason why some stocks are so much better than others at this season. Such, however, we find is always the case. All may have been well supplied with syrup the previous autumn and treated exactly the same. But the following spring it will be found on examination that some are much better than others, although spring dwindling has not taken place. This will also arise from a variety of causes. The age of the queen, and the time she stopped depositing eggs the previous autumn, are the chief causes. If the queen stopped laying early many of the bees, being old, would die off, and there would not be young bees to take their place.—AN ENGLISH BEE-KEEPER.

Trade Catalogues Received.

Barr & Sons, King Street, Covent Garden.—*Daffodils*.
Kelway & Son, Langport.—*Wholesale Plant Catalogue*.
W. Paul and Son, Waltham Cross.—*New Roses*.
T. S. Ware, Ltd., Feltham.—*Hardy Plants*.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Newly Planted Vines (*Inquirer*).—The canes planted this spring will indicate their taking to the soil by growing freely, and require ventilation early in the day, as the value of growth is dependent more on its sturdiness and solidification than on its length and sappiness. Encourage laterals rather than an elongation of the cane, but let that extend and retain all the growth that can have exposure to light. That is desirable where the Vines are weakly, but if they are vigorous it is a better plan to pinch the laterals at the first joint, and to one leaf of subsequent growth, stopping the canes at 9 to 10 feet, and allow the uppermost to grow a few joints, and then keep all closely pinched. If the cane produces growths cut away the worst. Supernumeraries intended for next year's fruiting should have the laterals pinched at the first leaf, afterwards allowing them to make a few joints of growth if weak, otherwise pinching to one leaf, stopping the cane at 8 or 9 feet of growth, taking every possible care of the leaves on the cane, not allowing them to be interfered with in any way by the laterals. Keep the soil moist, but not very wet, closing early, with plenty of atmospheric moisture.

Beet Near the Roots of Young Fruit Trees (*C. B. S.*).—We do not recommend Beet to be sown over the roots of young fruit trees, but advise keeping the ground free from weeds, which are often as bad or worse than a useful crop. Mulch outwards from the stem to the extent of the roots, or a little more, with about an inch thickness of rather short and not quite fresh manure. This will encourage the roots to spread near the surface, and secure greater uniformity of moisture in the soil by preventing evaporation, and instead of taking from the nutriment would add to that of the soil. Beet over the roots would abstract considerable nutrition from the soil, and the trees be prejudiced correspondingly.

Elæocarpus serratus (*Youngster*).—This plant is rarely seen, notwithstanding its beauty. According to the "Vegetable Kingdom" "the Elæocarpæ furnish a few plants to which a slight degree of interest is attached. Those round, carved-looking and rugged-furrowed, bony-like articles, which are used as necklaces and bracelets, and sometimes mounted in gold, are the fruit of the Olive Nuts (*Elæocarpus*) deprived of their fleshy parts. The fruits of some of the species are used in Eastern curries, and also pickled, while some are eaten raw, such as those of *E. serratus*, which the inhabitants of Ceylon preserve in brine before they are ripe, and eat with a little oil to give them a flavour. Rumphius says these fruits are good to eat, but the use of them is rather adapted for killing time than for any nourishment that can be obtained from them."

Ixoras (*R. T. P.*).—These plants succeed in a compost of two-thirds sandy fibrous peat torn in pieces by the hand, and one-third fibrous loam from decayed turves, adding about one-sixth part of silver sand and charcoal in pieces from the size of a hazel nut down to that of a pea, the whole being well mixed. The compost should be made rather fine, but not sifted. Good drainage is essential. Their proper time of rest is winter, during which they should be kept dry, but not so much so as to cause the foliage to flag. From September to February the temperature may be 60° at night, and from 65° to 70° by day, 55° at night in severe weather will not be too low. From February onwards the temperature should be slightly increased, so as to have it 65° at nights by May, and from 70° to 75° by day without sun, and from 80° to 90° with sun and abundance of air. These temperatures may be continued until September, when they should be allowed to decline.

Vine Leaves Mottled (*Gar*).—The leaves have the appearance of being infested by some fungus, but we cannot discover any mycelial hyphae in the tissues, and, of course, no outgrowths. It is not unusual for the leaves to have a somewhat yellowish and mottled appearance after recently planting, they being relatively small, somewhat thin in tissue, and not firm in texture. This only endures for a time, as when the roots work freely in the border the foliage gradually improves. Sometimes the roots, where turf is used, are preyed upon by wireworms and other pests, the foliage suffering in consequence. We advise a dressing to the border of a mixture of bone superphosphate three parts, sulphate of potash two parts, and sulphate of magnesia one part, mixed, using 4 ozs. per square yard, and pointing in lightly. To aid the development of the chlorophyll a dressing of soot, a good handful per square yard, may be used with advantage, or about half an ounce per square yard of finely powdered nitrate of soda. The soil should be kept moist, but not overwatered.

Bark of Beech Tree (*Somerset*).—The matter on the bark of the Beech tree is not caused by a fungus, but is the substance secreted by the Beech-bark scale insect, *Crytococcus fagi*, which fixes itself to the bark and pushes its beak into the living tissues, abstracting the sap of the tree, and the tree suffers in consequence, many left to their fate succumbing, even when of very large size, to the assaults of the pest. The tree should be dressed with a petroleum emulsion made by dissolving 1½ lb. of softsoap in a gallon of water over a gentle fire, and when boiling, the softsoap being dissolved, remove from the fire and add half a pint of paraffin oil, stirring briskly until thoroughly amalgamated, and for use dilute to 6½ gallons with hot water. Apply with a brush to the bark while at a temperature of 130° to 140°, using a rather stiff, or half-worn, clean paint brush, rubbing well into the cracks and crevices and dressing every part from the roots upwards to the full extent of the infestation, not leaving any part of the roots running on the surface of the ground undressed. From the early part of August to the middle of September look carefully over the tree, and if any white flocculence appear on the bark dress the parts with the solution. Similar attention should be given in the following spring, and then the pest will be subdued, though it is well to keep an eye on the tree and promptly apply the solution whenever the white appears.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not

more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. W.).—The Rose is one of the Lawrenceana (Miniature China) varieties, probably Gloire des Polyanthes, but the flower had fallen to pieces on arrival. (O. P.).—1, Vanda snavis; 2, Læliopsis domingensis; 3, Dendrobium fimbriatum oculatum. (B. D.).—1, Pteris umbrosa; 2, Adiantum capillus Veneris; 3, Asplenium bulbiferum; 4, Nephrolepis davallioides furcans; 5, Pteris cretica; 6, Selaginella Kraussiana. (S. E.).—1, Ribes aureum; 2, Viburnum Opulus; 3, Forsythia viridissima; 4, Lonicera hirsuta; 5, Prunus (Cerasus) Padus, the Bird Cherry; 6, Amelanchier Botryapium, the Snowy Mespilus. (L. D. M.).—1, Aubrietia purpurea; 2, A. Leitchlini; 3, Iberis correæfolia; 4, Doronicum plantagineum; 5, Phlox setacea. (O. V.).—Prunus (Cerasus) Padus, the Bird Cherry.

Covent Garden Market.—May 2nd.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, sieve ...	5 0	to 10 0	Lemons, case	4 0	to 15 0
„ Californian, case ...	8 0	14 0	Oranges, per case	5 0	15 0
„ Nova Scotian, barrel	15 0	22 0	„ Californian, seedless	16 0	24 0
„ Tasmanian	8 0	18 0	Pears, Californian, case...	6 0	12 0
Cobnuts per 100 lb....	80 0	90 0	Pines, St. Michael's, each	1 0	6 0
Grapes, black	5 0	10 0	Strawberries, lb.	3 0	6 0

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, green, doz. ...	2	6	to	3	0	Mustard and Cress, punnet	0	2	to	0	0
Asparagus, green, bundle	0	9		3	0	Onions, bag, about 1 cwt.	7	0		9	0
" giant, bundle	15	0		20	0	" Egyptian, cwt. ...	8	0		0	0
Beans, Broad, per flat ...	3	0		4	0	" Spanish, case ...	10	0		12	0
" Jersey, per lb..	1	0		0	0	Parslev, doz. bunches ...	2	0		4	0
" Madeira, basket ...	2	6		3	6	Peas, Jersey, lb. ...	0	9		1	0
Beet, Red, doz....	0	6		0	0	" French, lb. ...	0	7		0	0
Cabbages, per tally ...	5	0		6	0	Potatoes, cwt. ...	3	6		6	0
Carrots, doz. ...	3	0		4	0	" new Jersey, lb.	0	2		0	5
" new, bunch...	1	9		2	3	" Teneriffe, cwt....	18	0		28	0
Cauliflowers, doz. ...	1	6		3	0	Radishes, Jersey, long, doz.	0	8		0	10
Celery, bundle ...	1	0		1	9	" French, round, doz.	0	9		0	0
Cucumbers, doz. ...	2	0		4	0	Seakale, doz. baskets ...	4	0		7	0
Endive, doz. ...	1	6		2	0	Shallots, lb. ...	0	3		0	0
Herbs, bunch ...	0	2		0	0	Spinach, bushel ...	2	0		3	0
Leeks, bunch ...	0	3		0	0	Sprue, French, doz. ...	4	0		5	0
Lettuce, doz. ...	0	10		1	2	Tomatoes, doz. lbs....	4	6		5	6
" Cos, doz. ...	3	0		5	0	Turnips, bunch... ..	3	0		4	0
Mint, green, doz. bunches	3	0		6	0	" new	0	5		0	7
Mushrooms, lb....	0	8		0	10						

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bunches...	2 0	to 3 0	Mignonette, doz. bunches	3 0	to 5 0
Arums	2 0	3 0	Narcissus, yellow, dozen		
Asparagus, Fern, bunch...	2 0	2 6	bunches	2 0	3 0
Bouvardia, bunch	0 6	0 9	Odontoglossums	5 0	7 6
Carnations, 12 blooms ...	1 6	2 0	Pelargoniums, doz. bnchs	8 0	12 0
Cattleyas, per doz.	10 0	12 0	Roses (indoor), doz....	4 0	6 0
Daffodils, double, doz. bnch	3 0	5 0	„ Red, doz....	3 0	5 0
„ single, doz. bnch.	6 0	8 0	„ Safrano, doz	2 0	3 0
Eucharis, doz.	3 0	4 0	„ Tea, white, doz. ...	2 0	3 0
Gardenias, doz.	1 6	2 6	„ Yellow, doz. (Perles)	3 0	4 0
Geranium, scarlet, doz.			„ Maréchal Niel, doz.	6 0	12 0
bnchs.	6 0	9 0	„ English (indoor):—		
Lilium Harrisii, 12 blooms	6 0	8 0	„ La France, doz. ...	4 0	8 0
„ lancifolium album ...	3 6	4 6	„ Mermets, doz	3 0	8 0
„ „ rubrum...	3 6	4 6	Smilax, bunch	4 0	6 0
„ longiflorum, 12 blooms	8 0	10 0	Tulips, scarlet, bunch.....	0 6	0 8
Lilac, white, bundle ...	3 6	5 0	„ yellow, bunch.....	1 0	1 6
„ mauve, bundle ...	6 0	8 0	„ bronze, bunch.....	1 0	1 6
Lily of the Valley, 12 bun.	6 0	18 0	Violets, Parma, bunch ...	3 0	4 0
Maidenhair Fern, doz. bnch	8 0	10 0	„ dark, French, doz.	2 0	3 0
Marguerites, doz. bnchs.	3 0	4 0	„ „ English, doz.	2 0	3 0
„ Yellow, doz. bnchs.	3 0	4 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.				
Acacias, per doz. ...	12	0 to 24	0	Ficus elastica, each ...	1 6 to 7 6				
Arbor Vitæ, var., doz. ...	6	0	36	0	Foliage plants, var., each	1 0	5 0		
Arums, per doz. ...	6	0	8	0	Genistas, per doz. ...	8	0	15	0
Aspidistra, doz. ...	18	0	36	0	Geraniums, scarlet, doz....	6	0	10	0
Aspidistra, specimen	15	0	20	0	„ pink, doz. ...	8	0	10	0
Azaleas, various, each	2	6	5	0	Hyacinths, Dutch, doz. ...	10	0	18	0
Boragias, doz. ...	20	0	24	0	Hydrangeas, white, each	2	6	5	0
Crotons, doz. ...	18	0	30	0	„ pink, doz. ...	12	0	15	0
Cyclamen, doz. ...	6	0	8	0	Lily of Valley, per pot ...	1	0	2	0
Daffodils, pot ...	0	6	1	0	Lycopodiums, doz. ...	3	0	6	0
Dracæna, var., doz....	12	0	30	0	Marguerite Daisy, doz. ...	12	0	15	0
Dracæna viridis, doz. ...	9	0	18	0	Mignonette, doz. ...	8	0	12	0
Erica various, doz. ...	8	0	18	0	Myrtles, doz. ...	6	0	9	0
Euonymus, var., doz. ...	6	0	18	0	Palms, in var., each	1	0	15	0
Evergreens, var., doz. ...	4	0	18	0	„ specimens ...	21	0	63	0
Ferns, var., doz. ...	4	0	18	0	Spiræas, per doz. ...	8	0	12	0
„ small, 100 ...	4	0	8	0					



What is being done at Wye?

WE will fairly own up to our ignorance. If anyone had asked us two years ago of Wye our thoughts would have turned to placid meadows and more placid Herefords grazing therein. We know better now. We have localised Wye, and we have learned something of the work carried on there from an article by Mr. Willan in a recent number of the "Agricultural Economist." Kent has always been counted the garden of England, and therefore it is only fitting that in Kent should be established a training school for the future agriculturist, not only of that but of adjacent and other counties. No one hesitates now to urge a more scientific training for the young farmer, he must be put on a par with our professional men, for he wants, before he can make a living, a thorough knowledge of the ins and outs of his work. It is not book work alone that is learned here. A large farm gives the practical side. We find 130 acres of arable, with 120 of pasture land on the river Stour. Light soil, but responsive to generous treatment. No make-shift implements, no second-rate stock. Let us just see how things work out. Six-course system, so the plots are of eighteen acres in extent, with a twelve acre Lucerne field, Swedes and white Turnips, Barley, Mangolds, Cabbage and Potatoes, Wheat seeds, Oats, just what these young men will find on nineteen out of twenty-one farms.

Milk is a great feature of the farm, and we are glad of it, as in the better development of the milk trade depends many a farmer's well doing. The producers of this milk are Shorthorns of good milking strain, for mind you, kind reader, there are Shorthorns who do not fill the pail. We are not surprised to hear sheep do well. Romney Marsh is the variety. Such soil as is here described is the very best type for keeping sheep alive and improving them rapidly. Some districts are so essentially non-sheep growing that a trial results only in loss and constant disappointment. Berkshire and Middle White supply the bacon, and Shires the motive power. Of course the little industries are not neglected, and we are glad to see so much attention paid to the fowl yard. There is so much mismanagement among fowls, their purpose and their wants are often so badly understood, that they prove a loss instead of being a distinct gain. The same applies to the dairy school; it is no use having good milk to be ill managed, and why a lad properly trained should not make a deft dairyman we do not know. They have got the chance of an insight into all the mysteries. Wye would not be in Kent if Hops and fruit trees were left out and space is devoted to their care and culture.

To give a full list of the governing body, of the professors and the general staff, would take up more room than our editor would allow. Suffice it to say they are picked men. Many of the names have (shall we say) wide-world fame. This school or college was founded in 1894 by the Kent and Surrey Councils, and they contribute jointly £3000 per annum. The Board of Agriculture, too, comes in for a share of the expense. The study of chemistry is a natural outcome of any teaching bearing on agriculture or horticulture. Thus we find a laboratory specially prepared for the students' use, and also a biological laboratory for botanical and zoological experiment.

That this school has caught on is amply proved we think by the fact that the present accommodation is not enough; it has to be enlarged. This is a most satisfactory state of things, especially as we think the boarding fees just a trifle high. We see however, exceptions are made in favour of farmers' sons who show just cause for not being able to pay on the higher scale, and there

are also certain scholarships open to Kentish and Surrey youths. There is also a scale of fees for those who reside at home or with friends, but who attend the classes; day pupils we might call them. These fees are extremely moderate, and they make us rather wonder why, if the actual teaching can be afforded at so cheap a rate, the board and lodgings should be so high? Surely never were provisions so cheap as at the present, and the larger the party the more easily catered for. The full course is for two years. The students must be over sixteen years of age, and able to pass a test examination to show they have received a fair middle-class education, such as would be a lad for Cambridge or Oxford local senior examinations.

For the first year the student is expected to devote himself to such subjects as bear on soil, subsoil, rotation of crops, manures, implements, drawing and building construction, surveying, chemistry, botany, zoology, geology, physics, and mechanics. We think an unbiased reader will say there cannot be much time wasted if all these subjects are thoroughly gone into. Then the second year leads on to the management of live stock, dairy work, farm hygiene and management, engineering, surveying, levelling, drawing and building construction, agricultural chemistry, agricultural botany, entomology, veterinary science, estate management, law, forestry, poultry and bee keeping, Hop and fruit growing.

Now we hardly suppose it possible, or even desirable, that a youth should take up all these subjects. He will be guided by circumstances, and devote himself more especially to those branches for which he has the greatest aptitude; at any rate, he gets a chance of developing what talents he has. He comes, or should do, straight from school, where work has been done in an orderly manner, and he takes up new studies before he has lost the powers of application.

We know by ourselves how soon we get out of gear, as it were, and we have always advocated going straight from school to the training grounds for the life work. Desultory habits are quickly acquired, and not so quickly got rid of, and indeed a lad of sixteen or seventeen has not much time to lose. The sooner he has gone through his college course the sooner is he fitted to earn a little towards his own living. We think these studies are essentially fitted for farm-bred boys. They get to know the why and the wherefore of processes they have seen carried on at home, and if they have anything at all about them will soon be wanting to experimentalise on the paternal acres, and it is these lads who will make the future farmers. For lads other than those bred on farms we fancy the two years will be hardly enough. They will probably want rather a longer course, or an apprenticeship on a large mixed occupation under a master in the art.

Work on the Home Farm.

The wind and rain of Easter have been followed by a week of bright sunshine, with abnormal day temperature and fairly warm nights. There have been two frosts, but only slight ones; the result is a rapid growth of everything sown. Farmers agree that they never knew Barleys come up so quickly from the drills as have those lately sown. The warmth is having a splendid effect on grass and seeds, and if it were only possible to give pastures a short period of rest they might soon be really good. The improved prospect has a very hardening effect on prices of fat stock, as farmers are not too fully stocked, having perforce thinned their flocks and herds during the winter, and they are now anything but willing sellers. With a continuance of genial weather we anticipate somewhat of a boom in the stock markets.

We fear that there is no chance of a similar boom in grain. Last week's corn averages show an increase over the averages of twelve months ago of 1s. 4d. per quarter in Wheat and 4d. per quarter in Barley, whilst there is a decline of 2d. per quarter in Oats. Since last April we have had on our hands one of the biggest wars in our history, and an enormous drain on our stores of foodstuffs. Apparently the orders have gone to other countries, for our markets have been practically undisturbed, and it seems now quite hopeless for any miracle to occur that can give the British farmer any material help. Here we see the coal owners practically coining money as the result of combination at a pinch, but farmers have made no attempt to bring about a similar benefit to themselves through the scarcity of Potatoes. A splendid opportunity has here been lost simply from lack of cohesion. When will farmers cease to act individually, and really combine for their mutual benefit?

Mangolds being all sown, we are now preparing for Turnips; the

land is in good trim, and manures must be got ready for use when required. Superphosphate is the sheet anchor for both Turnips and Swedes, and if a good dressing of spit manure can be provided, phosphate is the only artificial required. Without manure for Swedes we should use 2 cwt. steamed bonemeal at 95 per cent. and 3 cwt. superphosphate per acre. Also 1 cwt. nitrate of soda after singling if the land be in poor condition.

Farmers are talking of growing Rape partly instead of Turnips on account of the probable difficulty of getting Turnips hoed and singled. This idea may be carried too far, and we ourselves would make great efforts to avoid such a disaster as the loss of the Turnip crop would involve. We should have thought that the want of roots had been sufficiently felt this season without willingly undergoing a repetition of it through lack of energy under difficulties. We remember a widow lady (a farmer) during a strike in the early seventies going out to hoe Turnips day by day, and surely present day farmers will not give up growing roots whilst such a thing as a singling machine is possible of invention and horses are not extinct.

THE AMERICAN WHEAT CROP.—According to the April report of the Department of Agriculture, the average conditions of the Wheat crop on the first day of the month was 82.1 per cent. of a full crop condition, as compared with 77.9 for last April, and 86.7 for April, 1898. In most recent years it has been the spring crop which, for its part, has done best, not only because it has yielded better than the winter division, but also because its acreage has shown the greater increase. This season, however, the lateness of sowing may possibly tell against the extent of the spring crop.

THE INDIAN WHEAT CROP.—A very disappointing account of the Wheat crop of India is given in the Second General Memorandum on it issued by the Indian Statistical Department. The only province in which an average yield is expected is Bengal, which is one of the comparatively small Wheat-growing provinces. In the greatest, the Punjab, where the area sown is 29 per cent. less than that of last year, only about half an average yield is expected on land not irrigated, and no more than 62 per cent of an average on irrigated land. In the North-western Provinces of Oudh, which stand next to the Punjab in area of Wheat, the outlook is not so bad, 75 to 80 per cent. of an average being anticipated. In the other provinces, however, the outlook is even worse than it is in the Punjab, the area being greatly reduced and the yield expected very small.—("Agricultural Gazette.")

ASPATRIA AGRICULTURAL COLLEGE.—The annual prize distribution at this institution, which was unavoidably postponed at Christmas, took place on Wednesday last week at the college, on the conclusion of a successful winter session, during which the college has been full up—numbering over forty students in residence. Principal and Mrs. Smith Hill entertained the staff and students to supper, and at its conclusion the college prizes and diplomas were handed to the successful students by Miss Todd. The external honours gained during the past year by Aspatria students are to be presented at the next public distribution, which is a well-known established feature of the college, when it is hoped that Mr. J. Bowen-Jones, J.P., member of the Council of the Royal, and chairman of the Shropshire C.C., will make the presentation.

AN LL.D. ON FEMALE FARM LABOURERS.—Extremes meet. While the Countess of Warwick is heading a crusade for getting women of culture to take up "lady crofting" as an intellectual and refined pursuit, and not as "mere turmit-hoers," Mr. Ferguson, LL.D., of Kinmundy, is equally anxious to get women "banished from the field" of agricultural labour altogether. Speaking at an agricultural meeting in Aberdeen last week Dr. Ferguson said, "One interesting thing connected with machinery was the completeness with which it had banished female work from the harvest field, and he thought that was a very good thing in itself. He should like to see all female labour banished from the harvest field." Apparently this LL.D. thinks that, although "corn rigs and Barley rigs are bonnie," yet they are not a suitable scene for female labour. The doctor gives no reason for considering the healthful and pleasant work on the "corn rigs" unsuitable for women. Potato harvesting would come under the same ban from the LL.D. of Kinmundy, and, as a matter of course, if the harvest field be an unsuitable scene for the labour of women, the cleaning and seeding of the land would be equally unsuitable as women's work. No doubt Dr. Ferguson has in his time delivered numerous speeches, in which he deplored the evils of rural depopulation and the miseries caused by overcrowding in the great cities, where women are forced through sheer necessity to work long hours every day under conditions which are a terribly sad contrast to the healthful and pleasant conditions of work in the harvest field. But did it never strike the learned doctor that the evils of rural depopulation would be tremendously intensified if female labour were to be banished from the field of agricultural work? Or does the laird of Kinmundy think that every woman ought to aim at being an LL.A., just as he is an LL.D. Far be it from us, however, to attempt to chop logic with a doctor of laws and logic of the calibre of "Kinmundy."—"North British Agriculturist.")

In the preceding statement the number of blooms staged in the classes set apart for three or more blooms of any one variety is not included.

As in the previous analysis, the positions given the different Show and Fancy Dahlias in the accompanying tables are dependent upon the average number of times each variety was staged at the last eight exhibitions of the N.D.S.

That reliable variety Mrs. Gladstone still retains the premier place on the list of Show Dahlias, a position it has now held for fourteen successive years. At one time, John Walker, the only pure white Dahlia in the table, and at another, R. T. Rawlings, the best yellow, threatened to displace it, but this refined pale blush variety by its more consistent records has always managed to maintain a decided lead over all other competitors. Next comes that dependable purple variety, William Rawlings, which is rather older than either of the three sorts above referred to. Neither of these four leading Show Dahlias was, however, quite up to its usual form last year; while Harry Keith, Mrs. Langtry, and a few other good sorts were even

more indifferently represented. Indeed, among the first twelve Shows in the table only J. T. West and William Powell were more frequently staged than usual. On the other hand, most of the varieties in the second dozen were in advance of their average records.

Of the newer Show varieties, those five or less years old, Dr. Keynes, sent out in 1896, occupies the best position at No. 16, having risen ten places since the previous analysis was issued. Next, at No. 22, we come to Shotesham Hero, distributed in 1895, which has also improved its position since last year. Florence Tranter, an 1896 variety, follows at No. 26; Chieftain, distributed in 1894, rises from No. 30 to No. 28; while Warrior, sent out in the same year, is still to be found at No. 29. Muriel Hobbs (1898) on its first appearance on the list takes its place at No. 44. The last of the seven newer sorts, Mrs. Every, although introduced in 1896, only just manages to creep in at the bottom of the table.

At the head of the Fancies we still find that marvellous Dahlia, Rev. J. B. M. Camm. I call it marvellous because, although it has now been in cultivation for more than a quarter of a century, no

SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1899 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	31.3	25	Mrs. Gladstone	1884	Hurst	Pale blush
2	25.4	20	R. T. Rawlings	1886	Rawlings	Clear yellow
3	23.5	19	John Walker	1892	Walker	White
4	22.4	20	William Rawlings	1881	Rawlings	Crimson purple
5	22.1	20	Colonist	1887	Keynes	Chocolate and fawn
6	21.0	20	Duchess of York	1894	Keynes	Lemon, edged salmon pink
7	20.9	24	J. T. West	1887	Rawlings	Yellow and purple
8	20.1	9	Harry Keith	1886	Koynes	Rosy purple
9	19.9	10	Mrs. Langtry	1885	Keynes	Cream and crimson
10	17.4	14	James Cocker	1871	Keynes	Purple
11	17.2	15	Arthur Rawlings	1892	West	Deep crimson
12	16.8	21	William Powell	1892	West	Primrose yellow
13	16.7	20	Duke of Fife	1890	Keynes	Rich cardinal
14	16.0	17	Maud Fellowes	1889	Fellowes	Pale pink, shaded purple
15	15.7	19	John Hickling	1890	Keynes	Clear bright yellow
16	14.5	17	Dr. Keynes	1896	Keynes	Rich buff
17	14.4	19	Mrs. W. Slack	1886	Keynes	Blush white and purple
18	14.3	11	Henry Walton	1873	Koynes	Pale yellow and scarlet
19	14.1	16	Harrison Weir	1883	Rawlings	Yellow
20	13.6	16	Miss Cannell	1881	Eckford	Cream and crimson
21	13.4	6	Ethel Britton	1880	Koynes	White and purple
22	13.3	15	Shotesham Hero	1895	Fellowes	White, tipped and shaded rose
23	12.6	14	Arthur Ocock	1892	Rawlings	Reddish orange
23	12.6	7	Shirley Hibberd	1881	Rawlings	Dark crimson
23	12.6	6	Willie Garratt	1887	Garrett	Bright cardinal
26	12.0	10	Florence Tranter	1896	Tranter	Blush white, edged rosy purple
27	11.4	5	T. J. Saltmarsh	1885	Rawlings	Yellow and chestnut
28	11.3	15	Chieftain	1894	Keynes	Purplish lilac
29	11.0	12	Warrior	1894	Keynes	Scarlet
30	10.0	20	Goldfinder	1881	Fellowes	Yellow and red
31	9.9	9	Prince of Denmark	1881	Fellowes	Dark maroon
32	9.4	11	Victor	1887	Keynes	Dark maroon
33	9.0	7	Majestic	1890	Keynes	White, edged purple
34	8.5	9	George Rawlings	1882	Rawlings	Dark maroon
34	8.5	7	Hon. Mrs. P. Wyndham	1881	Keynes	Pale yellow and rose
36	8.3	9	Virginale	1893	Keynes	Blush white, edged pink
37	8.1	7	Mrs. D. Saunders	1888	Rawlings	Pale, edged rose
38	8.0	2	Perfection	1889	Fellowes	Orange buff
39	7.9	4	Glowworm	1889	Turner	Bright orange scarlet
40	7.8	10	Mr. Glasscock	1886	Rawlings	Purple
40	7.8	10	Mrs. Morgan	1893	Fellowes	Pale ground, tinted rosy purple
42	7.6	10	Crimson King	1887	Keynes	Deep crimson scarlet
43	7.1	6	Alice Emily	1890	Keynes	Buff yellow
44	*7.0	7	Muriel Hobbs	1898	Hobbs	Yellow
45	6.6	1	William Keith	1888	West	Dark plum
46	6.4	5	Burgundy	1877	Turner	Dark puce
47	5.9	6	Earl of Ravensworth	1883	Harkness	Lilac
47	5.9	5	Prince Bismarck	1879	Fellowes	Puce
47	5.9	1	Queen of the Belgians	1887	Rawlings	Cream and pink
50	5.0	6	Mrs. Every	1896	Keynes	White, edged lilac

* A new variety, the position of which is dependent on its record for the 1899 show only.

other variety in this section can come up to it—can show as good an average record. In fact, only three years ago it was more numerous than any other Show or Fancy Dahlia in the exhibition, except Mrs. Gladstone and R. T. Rawlings. Duchess of Albany is another very reliable variety, and at the last two shows was rather more frequently staged than the leading flower. Mrs. Saunders, which some years ago was at the head of the list, although less largely shown than formerly, still retains its place at No. 3. The principal varieties which were to be met with last year more frequently than usual were Duchess of Albany, Dorothy, and Peacock; whereas Rev. J. B. M. Camm, Matthew Campbell, and T. W. Girdlestone were below their average form.

Of the three comparatively new Fancies in the table, Goldsmith, sent out in 1895, takes the lead at No. 8, having risen five places since the previous exhibition. Next comes Emin Pasha, distributed in 1894, at No. 12, followed by S. Mortimer of the same year at No. 13.

Turning our thoughts to those charming miniature Show and Fancy Dahlias, the Pompons, it will at once be realised that the changes here are more rapid, or rather less sluggish, than in the case of the two sections we have just dealt with. Consequently, a shorter average will better suit their requirements. Taking the mean records for the last four shows the varieties arrange themselves as follows. Those marked with an asterisk were sent out in 1898 or subsequently:—Bacchus, Tommy Keith, Nerissa, Emily Hopper, Phoebe, Captain Boyton, G. Brinckman, Whisper, Douglas, Dr. Jim, Sunny Daybreak, Arthur West, Distinction*, Eurydice, E. F. Jungker, Lilian, Demon*, and Snowflake*.

Up to the present time George Brinckman has stood in the forefront of the few good white Pompons that we have, while the latest candidate for honours is Snowflake, a new variety of much merit. Emily Hopper, although first distributed in 1874, still takes precedence of all the yellows; the best orange coloured variety being Phoebe, and the best pale yellow E. F. Jungker. Coming to the different shades of red, we find Bacchus, the leading flower in this section, at the head of the scarlets, Arthur West at the head of the crimsons, while Nerissa stands alone as the representative of the rose-coloured Pompons. Among maroons stands as leader Captain Boyton, rather closely followed by Douglas. Of the newer selfs may be mentioned Distinction and Demon as promising well in their respective shades of crimson.

In order to give some idea of the changes and improvements that have taken place in recent years in the Cactus section, I have

arranged in the following list the different varieties according to the number of times they were staged at the last exhibition of the National Dahlia Society; and for comparison their records for one or both of the two previous shows whenever they were represented five or more times:—

CACTUS DAHLIAS.

	1899	1898	1897	Colour.
Britannia, 1898	26	14	—	salmon pink and apricot
C. Woodbridge, 1897	25	18	—	crimson
Starfish, 1897	25	34	7	orange scarlet
Keynes' White, 1898	23	19	—	ivory white
Mary Service, 1898	23	21	—	russet yellow and heliotrope
Night, 1898	18	18	—	dark crimson
Countess of Lonsdale, 1899	17	—	—	salmon and apricot
Magnificent, 1899	17	—	—	salmon pink and apricot
Lady Penzance, 1894... ..	14	26	24	pure yellow
Lucius, 1899	13	—	—	deep orange
Alfred Vasey, 1898	11	8	—	reddish amber
Cinderella, 1897	11	18	—	purple
Fusilier, 1896	11	24	25	coral red
Stella, 1898	9	—	—	bright crimson
Viscountess Sherbrook, 1899	9	—	—	reddish terra cotta
Capstan, 1898	8	—	—	brick red
Laverstock Beauty, 1898 ...	8	—	—	soft red
Arachne, 1898	7	15	—	white, edged crimson
Island Queen, 1898	7	11	—	lilac mauve
Mrs. J. Goddard, 1898	7	—	—	crimson scarlet
Ebony, 1899	6	—	—	deep ebony
Eileen Palliser, 1898... ..	6	—	—	yellow
Mrs. Peart, 1893	6	8	9	creamy white
Exquisite, 1899	5	—	—	reddish cinnamon
Mrs. Wilson Noble, 1896 ...	5	21	17	pinkish salmon
Regulus, 1898	5	6	—	rich crimson

For the sake of our analysis if for no other reason, it is to be hoped that at all events some of the sorts mentioned in this list have come to stay. Hitherto the reputations of the Cactus Dahlias, which have been from time to time sent out in such rapid succession, have been extremely fleeting. For instance, it will be noticed that only Starfish, Lady Penzance, Fusilier, Mrs. Peart, and Mrs. Wilson Noble were sufficiently represented at the last three shows to entitle their records to appear under each of the three years. Moreover, of the fifteen varieties for which records are given for the last two years, more than half that number—Starfish, Lady Penzance, Cinderella, Fusilier, Arachne, Island Queen, Mrs. Peart, Mrs. Wilson Noble, and Regulus, although a year older at the time, were not as frequently exhibited in 1899 as in 1898, showing that they were rather losing than gaining ground in general estimation.

FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1899 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	20.9	18	Rev. J. B. M. Camm	1873	Keynes	Yellow and red
2	18.8	20	Duchess of Albany.....	1884	Turner	Orange and crimson
3	16.9	17	Mrs. Saunders.....	1872	Turner	Yellow and white
4	16.3	16	Mrs. John Downie	1889	Turner	Orange and scarlet
5	13.3	8	Matthew Campbell.....	1889	Keynes	Buff and crimson
6	12.9	11	Frank Pearce	1886	Rawlings	Rose, striped crimson
7	12.5	15	Dorothy	1888	Keynes ..	Fawn and maroon
8	12.0	16	Goldsmith	1895	Keynes	Yellow, striped crimson
9	11.7	9	T. W. Girdlestone	1890	Keynes	Lilac and maroon
10	10.0	8	Buffalo Bill	1890	Keynes	Buff, striped vermilion
11	9.6	12	Peacock	1877	Turner	Maroon and white
12	9.5	10	Emin Pasha	1894	Keynes	Yellow, striped crimson
13	8.4	11	S. Mortimer.....	1894	Mortimer	Rose, striped crimson
14	8.3	8	Rebecca	1883	Keynes	Lilac and crimson
15	7.4	7	Comedian.....	1892	Keynes	Orange and crimson
16	6.4	7	Dandy	1891	Keynes	Orange, striped crimson
17	5.9	2	Henry Eckford	1886	Rawlings	Yellow and red
18	5.5	11	Hercules	1877	Keynes	Yellow and crimson
19	5.4	5	Dazzler	1893	Keynes	Yellow, striped scarlet

A good white Cactus was at last found in Keynes' White, but even this is likely in the coming season to be superseded by a still finer flower of the same type—Green's White. Several yellows have made their appearance in recent years, but none has hitherto been found to equal Lady Penzance as an exhibition flower. But this old favourite, for is it not six years old? will I fully expect have to give place shortly to that paler but altogether superior flower of the same colour—Mrs. J. J. Crowe. Among crimsons Charles Woodbridge will, I think, be found hard to beat. At present Starfish, although not such a good type of flower as the variety last named, holds its own as the best scarlet. As regards the dark Cactus Dahlias, only three years ago Matchless (up to that time matchless in its shade of colour, and also matchless in habit), was to be seen in every stand, but has now been totally eclipsed by Night. Among the new type of Cactus, those with incurved florets, the orange Lucius stands high, if not at the top of these particular varieties. Coming now to those less pronounced tints which seem to defy all classification, so delightfully are the different shades of colour blended in them, we find some of the best Cactus Dahlias, if we consider together the form of flower and the habit of growth, that have yet been raised. I refer more particularly to such superb sorts as Britannia, the leading flower on the list, Mary Service, and Magnificent.

The most difficult section to arrange satisfactorily is the singles, on account of the limited competition in the classes devoted to these easily grown and dainty flowers at the exhibitions. This is, I think, much to be regretted, as they add greatly to the attraction of any show, forming as they do such a marked contrast to the double flowers in the other sections. Perhaps now that handsome silver medals (the new Girdlestone Memorial medals) are to be in future offered at our National Dahlia Shows in addition to the first prizes in several classes devoted specially to the single flowered Dahlias, more nurserymen and amateurs may be induced to compete in those classes.

In the following select list the varieties—except the newer ones, those sent out in 1897 or subsequently, which are marked with an asterisk—are arranged according to their average records for the last three shows. Polly Eccles,* Demon, Miss Roberts, Victoria, Jack Sheppard, Naomi Tighe,* Northern Star, W. C. Harvey, Aurora, Beauty's Eye, Donna Casilda,* Duchess of Marlborough,* Phyllis, Formosa, Miss Glasscock, Folly,* and The Bride.

Polly Eccles, in the opinion of the raiser, the late Mr. T. W. Girdlestone, "the best type both as to habit and form among single Dahlias," deservedly heads the list. This is followed by another of Mr. Girdlestone's flowers, Demon, the best maroon variety, and next comes Miss Roberts, the best yellow. The variety last named, although distributed twelve years ago, still stands unrivalled in its colour. A really good white, a really good crimson, and a really good scarlet are still wanted; at present the best in their respective tints are The Bride, Rosebank Cardinal, and Formosa. Of the varieties named in the list Polly Eccles, Demon, Jack Sheppard, Naomi Tighe, Donna Casilda, Phyllis, and Folly, or nearly half the number, were raised by Mr. Girdlestone.—E. M., *Berkhamsted*.

Reminiscences of An Old Florist.—No. 7.

In thinking over the matters which most deeply interested me in horticulture during the sixties and seventies there are some few facts which stand out with great prominence. First the opening of the Royal Horticultural Society's Gardens at South Kensington, which seemed to begin with such great promise, but which proved so disastrous that at one time the Society looked as if it would never survive it. Next, the Grand International Exhibition in 1866, probably the finest exhibition ever seen, but which owing to the capriciousness of our weather promised to be an absolute failure, and would indeed have

proved to be so had it not been for the courage of the few individuals who turned the expected failure into a grand success. Then there were others which, while they affected horticulture more or less, affected me personally very much.

I do not exactly recollect whether it was at the opening of the South Kensington Gardens, or somewhere about that time, that the editors of the *Journal of Horticulture* were looking out for some one to undertake the florist flower department of their Journal; my good friend, Mr. Standish, said to the late Dr. Hogg, "Surely you could have no more suitable person than the correspondent who signs himself 'D., Deal.'" He brought us together, we talked the matter over, and that was the beginning of our close and intimate friendship. During my intercourse with Dr. Hogg I was struck by his wide and extensive knowledge of everything connected with horticulture, for though he is best known to the horticultural world as the author of the "Fruit Manual," he was also a keen florist, being very fond of florist Tulips. Of these he had an extensive and valuable collection, and he continued to cultivate them until the close of his life at his home in Sussex. Having so much in common, we had much pleasant intercourse, and when his death occurred it was a great pleasure for me, in conjunction with my friend Mr. Harry Veitch and several other of his friends to obtain a die which was presented to the Royal Horticultural Society. From this medals are cast every year and presented to successful fruit growers under the designation of the Hogg Memorial medals.

Some years later I became in 1861 the Editor of the "Floral Magazine," published by Messrs. Lovell, Reeve & Co. There was a great dearth of floral artists in those days. Mr. Fitch was the artist to the "Botanical Magazine," and as that was published by Messrs. Lovell, Reeve & Co., he was naturally chosen as the artist for the new venture. However artistic his drawings were he did not satisfy the raisers of florist flowers to which the new magazine was especially devoted. I had therefore to engage the services of Mr. James Andrews, who for several years had been well known as the artist for various publications, and he undertook the work of the pictorial portion of the magazine. Many persons contended that the drawings which he made were not the flowers as he saw them, but rather idealised. Be this as it may, the popularity of the magazine rapidly increased, and as it was a time when general prosperity was increasing by leaps and bounds, it came in for its full share of success.

After some years Mr. Andrews retired from the post of illustrator, whereupon it was taken up by Mr. Worthington G. Smith, and we worked together until the time came that I, too, gave it up. It was always a difficult matter to know what flowers to choose, for four had to be selected each month. I have no doubt that mistakes were made, and as I look at the volumes now I am forced to confess that some of the strictures made were just, but it must be remembered that some of the flowers figured were essentially formal in themselves, and consequently were very difficult to make good pictures of. They were all coloured by hand, and in that respect presented a feature peculiarly their own, as there was no other publication of the kind at that time.

Two events as I said before occurred in the sixties of peculiar interest to horticulturists; one the opening of the Royal Horticultural Society's gardens at South Kensington, the other the grand exhibition of 1866. The ground of South Kensington had been acquired by the society from the Commissioners of 1851, and they passed it over to the Society, holding a mortgage on it. This in effect left them in the position of owners, for it was stipulated that if the Society failed to pay the interest it should forfeit all rights under the deed. I believe that about £120,000 was the amount of the mortgage, and it soon became evident that the whole thing was not intended to advance the interests of horticulture, but to be a sort of recreation ground to those Fellows of the R.H.S. who lived in the neighbourhood. The opening day was, however, most auspicious; a large number of plants were collected and the fine conservatory and the arcades were well filled, new and rare plants were brought forward, and all seemed to promise well. There were many, notwithstanding this, who shook their heads and were inclined to adopt the saying of General Pelissier when he saw the magnificent charge of the Light Brigade at Balaclava, "It is magnificent, but it is not war;" saying "This is all very fine, but it is not horticulture." For many years the society dragged on a troubled existence at South Kensington, until at last the R.H.S. shook itself free from the entanglement.

My recollection of the exhibition at the opening of the gardens centred especially around two plants; one was the first flowering bulb of *Lilium auratum*, exhibited by Messrs. James Veitch & Sons of Chelsea. Drawings of this gorgeous flower had been sent from Japan, and some people regarded them as the result of the imagination of the Japanese artists, while others, who knowing how faithful they had proved in the representation of other flowers, believed that we should one day see this gorgeous Lily as delineated. The other was a group of that beautiful terrestrial Orchid, *Disa grandiflora*, exhibited by my

friend the late Mr. Charles Leach of Clapham. The plant had been well known as having only one habitat in the world, Table Mountain in the Cape of Good Hope, whence it was introduced in 1825, but no one seemed to succeed with its culture. Mr. Leach had correspondents at the Cape, and from them he obtained such information as led him to achieve a great success. It had been the habit of cultivators to dry off the bulbs, and thus to insure their failure. As Table Mountain is mostly enveloped in fog and mist there is a continual moisture kept up, in which the plants luxuriate. Mr. Leach observed that when the flowering stem died off a new shoot had been formed at its base, which was in fact the bulb for the future plant. It was no wonder then that those who were interested in new and rare plants clustered around this group, and I shall never forget the exultation of that good gardener, Donald Beaton, how he kept calling people to come and admire them, and how he praised the beauty of the plants.

The Government of Cape Colony, seeing how the plants were being carried off, has forbidden its exportation now. It is a somewhat remarkable thing that many of our very largest Orchid nurserymen



Orchids at Wellesbourne House.

THERE is usually something good to be seen in the gardens connected with the above Warwickshire mansion, as W. M. Low, Esq., is thoroughly interested in all matters pertaining to gardening, and his able gardener, Mr. H. Liney, spares no effort to provide special features, of which his employer may be justly proud. Three years ago Orchid culture was taken up in earnest. A range of houses fitted with every modern appliance was erected, and large numbers of Orchids were obtained from various sources, the majority of them



FIG. 106.—DENDROBIUMS AT WELLESBOURNE HOUSE.

are obliged to confess they can do nothing with *Disa grandiflora*; and that while they can show you thousands and tens of thousands of *Cattleyas*, *Odontoglossums*, and *Cypripediums*, they are obliged to confess, if you ask them about *Disas*, that they can do nothing with them. I had this answer lately from two very eminent London firms, and yet I know of others who succeed with them. A good many seedlings have been raised, but many of them lack the lustrous beauty of the typical plant.

It was a long and dreary time through which the Society passed; members were elected on the council who knew nothing of horticulture and cared less, and the charter clung round the neck of the Society like a millstone, while no possible outlet from the imbroglio seemed likely. However, at last deliverance came, and those only who felt the bondage of those miserable years can realise the security and peacefulness of the Society in its present state. A great deal of this is owing to the resourceful energy of its present accomplished secretary the Rev. W. Wilks. Larger schemes are in contemplation, but at the present juncture it would be unwise to speak of them until they are more fully developed. If the new movement should prove as prosperous as the last, the Royal Horticultural Society may yet realise the hopes of half a century of enthusiasts.—D., Deal.

being newly imported. These were started in crocks in the usual way, and afterwards potted in a mixture of peat and sphagnum. A year after, when I saw them, the plants looked extremely promising, but rapid strides have been made since then, and the accompanying illustration (fig. 106) will convey some idea of the wealth of flowers with which the *Dendrobes* were studded. A finer display of these brilliant spring flowering Orchids it has never been my lot to see.

Some of the growths on *D. Wardianum* were upwards of 3 feet in length, carrying as many as thirty-five finely developed flowers. The old, yet still popular, *D. nobile* was strongly represented, some of the forms being exceptionally good, far in advance of many of the varieties still grown. Plants which show a decided improvement in the form or markings of their flowers unfortunately do not always grow and flower so freely as inferior varieties, but in this case the dual good qualities were combined. A single plant in one instance carried no less than 227 flowers, and several others must have produced almost as many.

Other species in flower were *D. thyrsiflorum*, *D. phalenopsis*, *D. Ainsworthi*, *D. crassinode*, and many others. A few *Cattleya* flowers were already expanding, and healthy plants and flower sheaths gave promise of beautiful things to come. The hard, strong

growths of the Dendrobies, and perfectly healthy foliage of other kinds, led me to inquire of Mr. Liney to what special details of culture he attributed his success. He was very emphatic in his reply, the substance of which may be put in a few words. During the growing season the Dendrobies were constantly surrounded by a moist atmosphere, a natural kind of moisture, promoted by employing gravel to cover the walks and stages. The temperature of the house was never at that stage allowed to fall below 60°, the usual night temperature being from 60° to 65°, with a rise of 5° by fire heat in the daytime during dull weather.

After the growth was completed and hardened, a long and thorough rest was given, the plants being placed in a vinery during the autumn, and left there till the flower buds were well advanced, because if taken into heat at an earlier stage, young growths would start and check the flowers. The whole collection of Orchids under Mr. Liney's charge reflects the greatest credit upon all connected with it, and amply demonstrates that the individual plants received constant attention of the right skilful kind.—VISITOR.

Notes on Potato Culture.

THERE can be no excuse nowadays for growing inferior varieties of Potatoes, as new and at times improved sorts are freely distributed. The question of soil has, however, much to do with the cooking qualities, and it is folly to condemn certain varieties without a trial, because what is good in one locality may be quite worthless in another. The point is to test several and adhere to those that are a success, changing the seed every second year. Some varieties, although prodigious croppers, are not of good flavour, and quality in such an important article of food should be the first consideration. White skinned tubers are more generally grown than those that are purple or red skinned, and as a rule are of higher quality. There are, of course, exceptions to this. For instance, Beauty of Hebron, a red skinned variety, if not superior is quite equal in point of quality with the white Beauty of Hebron. There is no Potato that possesses higher quality than the latter. If I were compelled to grow only one sort it would be this, as tubers from it cook well when dug in August, and equally well the following April. Unfortunately it is a rather shy cropper.

There are mistakes made in Potato culture, and the most serious is that of not allowing sufficient space between the sets for the haulm to develop without crowding. Weak growth results from this, the leaves cannot mature owing to a want of light and air, and a quantity of immature tubers deficient in all essential points are the outcome. It is thought that by planting thickly a piece of ground will produce a greater weight of tubers. This is decidedly erroneous. Another mistake made, and it is also a common one, is in the preparation of the seed, or "sets." Too often they are kept in a big heap until required, with the result that the shoots are 6 inches long, weak and useless for any purpose. The best form of sets are those about 2 ozs. in weight, with shoots $\frac{1}{2}$ to 1 inch long, stocky, and of a dark colour, and the sets should not have more than two growths, in fact one strong one is sufficient. For ordinary garden culture the sets should be placed on end in a cool light room for about a month before they are required for planting. The planting will be done successionally from the middle of March to the end of April, when the main crop should be got in. The subject of cutting the sets previous to planting has caused much difference of opinion. Personally I do not think it matters whether they are cut or not.

The Potato likes a tolerably rich soil, but the addition of manure at planting time requires some forethought. When the soil is heavy and retentive of moisture the manure should be applied in the autumn, as over-luxuriance of growth predisposes to disease. Light land may safely be manured at planting time. Speaking of field Potato culture generally, I prefer artificial to farmyard manure; it is more easily applied, and is certainly successful. As an instance of the use of such manures, I have during the last three years grown Potatoes on the same land with the aid of Webbs' manure only, and with success. In the case of heavy soil, where the manure is applied in the autumn the surface should be left in as rough a state as possible, so that frosts can act readily upon it.

In any kind of soil I prefer to dig the land and plant at the same time, as the soil is then left light and free for the roots to work in. In the case of heavy soil where the manure has been dug-in, in the autumn I chop out with a spade a furrow 6 inches deep, sprinkling along the bottom of it a 2-inch layer of decayed vegetable refuse, wood ashes, and old potting soil. This prevents in a great measure the scabbiness too often noticed in Potatoes grown on heavy soils, especially in a wet season. Early varieties of the Ashleaf type may be planted 10 inches apart in rows 22 inches wide. The second crop, of which Satisfaction and Supreme are representative varieties, should not be less than 13 inches apart in rows 2 feet 3 inches asunder. Late varieties like Windsor Castle, Up-to-Date, or Triumph should have fully a yard of space between the rows, and not less than 18 inches in

the rows. The question of variety is largely a matter of opinion and individual taste. In addition to those already named, Ringleader, Sutton's Ninetyfold, and A1 ought not to be forgotten amongst the early sorts; while Supreme, Reliance, and Flourball might safely be added.—E. MOLYNEUX.

Useful Herbs.

Mint.

THE ordinary garden or Spearmint is in much demand in spring and early summer. It is often required earlier than shoots are produced outdoors, and when this is the case a good breadth of roots ought to be available, so that a portion may be lifted and transferred to boxes or pots for standing in a warm house or frame, where stems will soon commence growth. When well started transfer to a cooler position. If kept moist growth will continue to be produced, using the longest and stoutest shoots first. If not too greatly weakened by close cutting the roots may be replanted, but if better material is available discard roots which have been forced.

Where there is much demand for Mint a new bed should be formed each year. The present is a suitable period to carry out the work, as an abundance of stout young growths may be found, which can be planted and depended upon to grow well. Each shoot can be lifted, and have a considerable portion of its underground stem attached. An open position and fairly well worked soil ought to be selected for the growth of Mint. Cut a trench out with the spade and carefully lay in about 6 inches apart the most suitable growths which can be found. Fill in soil over them, make firm, and level. They ought not, unless the ground is very dry, to require water, but if planted in sunny weather give a supply before filling in the last soil. Plant in rows 6 or 8 inches apart. It is not desirable to pick the growth from this last bed the first season. If the demand is not great annual planting may not be necessary, once in three years sufficing. The roots extend in the soil in the course of a season, often beyond the boundary of the bed. These outside growths will be found the best for planting.

Parsley.

Parsley is in demand the year round, and some difficulty is frequently found in maintaining a liberal supply during winter and early spring if protection is not afforded, which is best given by the aid of a frame, though coddling the plants should not be adopted. Place a frame over a bed before severe winter weather sets in, but give abundance of air and exposure whenever possible. Protection is needed only against damp and frost. Two sowings of Parsley are usually sufficient for most gardens. One sowing should be made in spring, the other early in August. The first sowing carries on the supply through the summer, autumn, and winter, and the last comes into use the following spring, remaining profitable throughout the year. Parsley ought to be sown in drills 4 to 6 inches apart on good rich loamy soil, so that the growth is vigorous. By sowing in drills the plants are readily thinned out. This may be done gradually. The more space the seedlings have the better they will grow and develop into fine bushy plants. The late summer sowing does not produce very large plants, but they are of a character which are likely to resist damp better than those with dense foliage. Unless absolutely necessary they should not be protected, as the plants are mostly too small for picking from; nor should it be necessary to do so with larger plants established earlier in the season. A few plants might be established in pots in autumn, and stood in a cool house on the approach of bad weather. This stock will probably come in useful during the course of the winter, all that is required being that the soil should be kept moist, and the plants have plenty of light, picking off yellow leaves if they appear. A good strain of curled Parsley is the best for ordinary purposes, as handsome and ornamental leaves can always be found.

Sage.

Sage is an indispensable herb in every garden. It is a hardy perennial, and exists for several years as a bushy shrub. It is readily propagated from young growths taken off the old plants at this season, inserted in sandy soil, kept moist, and shaded until rooted. Sage is also easily increased from seeds, sowing now in shallow drills about 6 inches apart, and thinning out the seedlings to the same distance. Take the tops out of the small plants, to induce them to form bushy plants. After the first season the plants will flower annually. These should be nipped out before they open, as their development tends to exhaust the plants.

Thyme.

Common Thyme and Lemon Thyme are cultivated in all gardens, as the smallest selection of herbs would not be complete without them. Propagation is effected by seed and divisions of the old plants. Sow seeds in shallow drills 4 to 6 inches apart, and thin out the plants as they touch each other. When they become bushy tufts, lift and replant 6 inches apart in rows a foot asunder. Division is effected before active growth commences, making moderate sized tufts, with roots attached. Water in dry weather, keeping the soil free from weeds.—E. BARROW.

NOTES

& NOTICES

Recent Weather in London.—On the whole the weather in the metropolis during the past few days has been satisfactory, inasmuch as it has been decidedly favourable to most vegetation. Saturday was fine, as was Sunday until the evening, when there were thunderstorms accompanied by a miniature whirlwind and torrential rain. Monday was warm but only bright at intervals, while on Tuesday it was a little dull, and very close. At the moment of going to press on Wednesday it was wet.

Weather in the North.—The first week of May has been generally wet, and high winds have occurred, the 3rd and the following night being specially boisterous and showery. Monday in the former part was extremely wet, but the afternoon improved, and the evening was fine and genial.—B. D., *S. Perthshire*.

Jersey Potatoes and the Frost.—Supplementary to the note on page 372 of the damage to the Jersey Potato crop, we learn that one-half of the total acreage has been affected, whole fields being completely ruined. This is all the more disappointing, as the crop this year was a week earlier than usual and a good season was anticipated. The importance of the Potato industry to the island is evinced by the fact that over 60,000 tons of Potatoes, valued at over £333,000 were exported last year.

The Trees in Marylebone Road.—A correspondent writes to the "Morning Post":—"I believe that many of your readers will deplore the fact that the finest trees in London, the great Planes in the Marylebone Road, are about to be felled. Two are already down, and the others are doomed. These trees have been the wonder of visitors and the delight of tired Londoners for a century or more. Now, however, flats—at once the boon and the curse of London—are to take their place. Is there no help for it?"

Death of Mr. T. B. Haywood.—We learn with deep regret of the death on Thursday last, May 3rd, at Woodhatch Lodge, Reigate, of Thomas Burt Haywood, who was in the seventy-fourth year of his age. The deceased was well known at the Royal Horticultural Society, of whose council he was a member, and he attended the meetings in the Drill Hall with great regularity, but unhappily failing eyesight prevented his appreciating the exhibits to the full. It is difficult to say in what particular direction in horticulture his proclivities ran, as he maintained all departments of his garden—which has long been in the charge of Mr. C. J. Salter—at the highest state of excellence. Perhaps Orchids and Roses were the prime favourites, but Chrysanthemums, hardy and tender fruit, and general plants were all magnificently grown. Mr. Haywood was treasurer of the National Rose Society and of the Royal Gardeners' Orphan Fund, and he will be missed from the meetings of these and many other horticultural associations.

The Wearing of the Rose.—This new custom on St. George's Day has been described as a "handicap celebration." "Than the Rose," says the "Daily News," no one could desire a better symbol. Saint, date, and flower—they are three superlatives. But the bother is that Roses do not bloom in April. True, the nurseryman will do anything you ask him. Roses in April are within the easy reach of an art that can soar to Strawberries in December. But the performance is spoiled by the penalty, as the experiences of St. George's Day made plain. City men were invited, and consented, to pay a shilling for their buttonholes. In Throgmorton Street the celebration looked like a complete success. But in Kentish Town it didn't. The democracy, having abundance of patriotism, but a scarcity of shillings, was at a grievous disadvantage. A painful comparison was afforded with recent instances of floral symbolism. The busman's piece of Shamrock was as good as the banker's; the duchess's Primrose was no better than the dairymaid's. People on this occasion, however, were driven to awful alternatives. Some sported dilapidated bundles of petals that had been Roses once. Others bought French blooms—their poverty and not their patriotism consenting. A third class condescended to inorganic imitations. Unhappy creatures! To wear a paper Rose can be hardly more satisfying to the soul than kissing a wax-work doll."

The Queen's Visit to Ireland.—During her Majesty's stay at the Viceregal Lodge the utmost pressure was put on the shoulders of Mr. D. Watt, the head gardener, to sustain the floral department. Prior to her Majesty's departure she presented him with a diamond pin as a recognition of his services; the pin has V.R.I., surmounted with a ruby crown, and the letters are in diamonds on a background of enamel.

Exhibitions of Florists' Tulips.—We learn from Mr. J. W. Bentley, one of the most enthusiastic Tulip growers in the country, that the northern exhibition will be held at Middleton on June 2nd, and that Butley Show will be on June 8th. The London exhibition will be held in connection with the Temple Show, and will presumably last only one day, but of this we have no official intimation.

London County Council Scholarships.—Several scholarships are being offered by the Technical Education Board of the London County Council, including two, one to young men and one to young women, which will give free board and education for two years at the Swanley Horticultural College. Seven junior scholarships in practical gardening, open to boys between fourteen and sixteen, are tenable at the Botanic Society's school in Regent's Park.

Green Peas for Londoners.—It was stated in a recent issue of the "Daily Telegraph" that the Great Eastern Railway Company in the course of a year deals at its London goods station with about 500,000 tons of merchandise. Of this, one special branch—the Green Pea traffic—represents during the season as much as 11,600 tons. This tremendous bulk of produce is brought to London by special trains, and has reached as heavy a weight as 950 tons in one night, the delivery of it to the various markets at Spitalfields and Covent Garden, commencing as early as 9.30 P.M., taking all night, and up to 8.30 the following morning.

Fruit Prospects.—The prospects for the coming fruit season appear to be good generally, that is to say, quite up to the average. Recent gales have not improved matters, though the actual damage done has not been great. The season, however, will be somewhat late. This is to be, says a daily contemporary, a great berry year—Strawberries and Gooseberries promising particularly well—but the stone fruit yield will not be large. There is no reason to believe that there will be a shortage of Apples and Pears. At present Tasmanian Apples are having a wonderful sale, and Spain is going to send us some fine Cherries. Altogether fruit lovers should be able to have their fill this summer.

Gardening Appointments.—Mr. Charles Higgins, formerly head gardener to John Mansell, Esq., Edenmore, Raheny, Dublin, continues in the same position with the new occupier, — Guinness, Esq. Mr. A. Crombie, the eldest son of Mr. David Crombie, head gardener to the Hon. Viscount Powerscourt, Enniskerry, has been appointed head forester to Sir Herbert Maxwell, Bart., Monreith, Wigtonshire, N.B. Mr. Crombie gained a bursary, valued at £30, at a forestry examination held in Edinburgh about six months ago. Mr. J. C. Ireland, for the past eighteen months foreman at Ladykirk, Norham, Berwickshire, N.B., has been appointed head gardener to J. Beausire, Esq. Wethersfield, Noctorum, Birkenhead.

Agricultural Schools for Ireland.—There has been a great stir recently in Tullamore owing to the necessity of having an agricultural school in the vicinity. In the early portion of the past week a representative gathering was convened, the chief motion for discussion being, What are the best means of securing the advantages of the Technical and Agricultural Instruction Acts for the people of the town? The chair was occupied by the Very Rev. Philip Calliery, and after a fairly long discussion the following resolutions were agreed to. First, proposed by Mr. Wm. Adams, J.P., and seconded by Mr. James Hayes, J.P., "That considering the many benefits likely to follow from the establishment of agricultural as well as technical schools of education, it is hereby proposed that the necessary steps be taken for the introduction of such schools in our midst, and with this view a committee of the people of town and country, without distinction as to creed or class, be formed forthwith with the above object;" second, Dr. Moorehead, J.P., proposed and Mr. E. Williams seconded, "That the new department be placed under the supervision and management of Mr. Lavin, B.A., and his assistants;" and third, on the motion of Mr. John Power, seconded by Mr. W. R. Power, "That a committee be formed with power to add to their number if required, and to carry out as far as possible the ideas embodied in the above resolutions." Such a committee was formed, the secretarial work being entrusted to the Rev. Father Fitzsimmons.

The Earls' Court Exhibition.—The opening day did not pass without evidence of the inferiority of man. Fairy lamps are placed around the flower beds in the gardens, and these were all connected by an inflammable cord, which was so disposed that, the flame running along the line, the lamps were (or ought to have been) automatically lighted. It happened on Saturday that, while this process was in operation on one of the beds in the Western Garden, a cnrate, catching sight of the travelling flame, leapt immediately among the "Geraniums" and Lobelias, and stamped it out. Looking around, as for some acknowledgment of his presence of mind, he encountered the sad and reproachful gaze of the gardener's assistant.

Birmingham Gardeners' Association.—At the fortnightly meeting of the spring session, held on the 7th inst., Mr. W. B. Latham presiding, there was one competitor for the prizes offered by the committee for essays on the "Cultivation of Primulas, Cyclamens, and Winter Flowering Begonias." Mr. James Hales, Edgbaston Botanical Gardens, was awarded the first prize. He dealt with the respective subjects in a comprehensive and thoroughly practical manner. A useful discussion ensued. Mr. Geo. H. Thompson, Grove House, Walsall, a successful amateur orchidist, exhibited a young well grown example of *Cymbidium Lowianum*, to which was accorded a certificate of merit, and a similar award was granted to Mr. H. T. Martin, gardener to Lord Leigh, Stoneleigh Abbey, Kenilworth, for remarkably fine Seakale, the thirteen blades weighing collectively 11 lbs., being the produce of one-year-old "sets." An interesting collection of cut flowers from the Botanical Gardens also served to enhance the meeting.

Liverpool National Amateur Gardeners.—Good progress is apparent at each meeting, both in the attendance and in the exhibits. Mr. A. W. Ardran, the enthusiastic president, occupied the chair on Thursday last in the Common Hall, Hackins Hey, Dale Street. The chief business centred in a paper entitled "Notes on Plant Propagation," by Mr. J. Guttridge, curator of the Wavertree Botanical Gardens, which proved most interesting from every point of view. In sowing seeds, Mr. Guttridge said, it required forethought and practical experience, and that the majority of alpine and herbaceous plants should be sown in autumn or early spring. Propagation from stem and root cuttings, grafting, and hints on hybridisation were also discussed, a hearty vote of thanks being passed to Mr. Guttridge at the close. Among the exhibits Orchids were conspicuous, Mr. A. Dodd winning with a nice *Cattleya Mossiae*, and the buttonhole flowers of Mr. Drake and Mrs. McGregor were quite noteworthy. Mr. Ardran exhibited splendid cut Roses, Miss Hunter taking second honours. Mr. Dodd won the Fern prize, and Mr. R. H. Hoskyn the president's monthly prize with a fine selection of cut blooms.—R. P. R.

The Shrewsbury Show.—I have received the schedule of prizes for the show which is to be held on August 22nd and 23rd, and, as usual, such inducements are offered that prompt exhibitors to stage products of the highest possible character. For specimen plants and large groups a sum of upwards of £200 is allocated to four classes, the first prize in three of them being £25, and in the fourth £20. This cannot be said to be a bad beginning. The cut flower section is always a brilliant one at Shrewsbury, and this year should be no exception. The class for the tasteful representation of bouquets and baskets of flowers in a space of 10 feet by 5 feet should be a splendid one, as the prizes are £15, £12 10s., and £10 respectively, with a silver cup to the premier winner. For what may be termed "space" collections of Roses, Carnations, Dahlias, Gladioli, hardy border flowers, and Sweet Peas, generous provision is made, and a gorgeous result may be confidently anticipated. In the decorative dessert table class, as the prizes are £15, £12, £10, and £5, up-to-date arrangements may be expected in this beautiful feature of the show. The "champion fruit class" is bound to arouse much interest. The stipulation is for twenty-four dishes of British grown fruit in a space of 10 feet by 4½ feet, on terms clearly stated in the schedule. Plants and flowers are allowed for decoration, and for these special prizes of £3, £2, and £1, those for the fruit alone being £25 and a gold medal, £20, £15, and £10. The "highest cultural merit" of fruit is the great objective in this class, and judging the decorations separately is an excellent idea. Liberal prizes are also offered for other collections of fruit, including Grapes. About 150 prizes, ranging from £6 to 2s. 6d., appear to be offered by seedsmen for vegetables, of which there will, no doubt, be an overwhelming supply, and the exhibition as a whole must be on a scale of first-class magnitude and excellence.—A JUDGE.

Royal Meteorological Society.—At the ordinary meeting, to be held in the rooms of the society, 70, Victoria Street, Westminster, S.W., on Wednesday, the 16th inst., at 4.30 P.M., the following papers will be read:—"The Wiltshire Whirlwind of October 1st, 1899," by the late G. J. Symons, F.R.S.; "The Variations of the Climate of the Geological and Historical Past and their Causes," by Dr. Nils Ekholm, hon. mem. R.Met.Soc.

Isle of Wight.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Sandown on Saturday last, Dr. J. Groves, B.A., J.P., in the chair. Mr. Cor. Orchard, F.R.H.S., read a very interesting, suggestive, and practical paper on "Flowering and Ornamental Foliage Creepers for the Embellishment of House and Garden," which evoked a very instructive discussion. Mr. J. H. Perkin, Los Altos, Sandown, staged a magnificent and effectively arranged group of plants consisting of Ferns, Caladiums, Crotons, *Dracenas*, *Schizanthus retusus*, *Isolepis gracilis*, and *Coleuses*; also a fine dish of Royal Sovereign Strawberries. For the above exhibits he received the association certificate. Several new members were elected at the close of a most successful meeting.

April Weather at Dowlais.—Rainfall, 2.70 inches, which fell on sixteen days. Greatest falls, 0.48 inches on the 11th and 23rd. Same period 1899, 6.21 inches on twenty-one days. Temperatures: Mean maximum, 53.93°. Highest reading 74° on the 21st and 22nd; mean minimum, 32.87°. Lowest reading 19° on the 7th. Below freezing point on twelve nights. Mean of maximum and minimum, 43.40°. Mean sun temperature for the month, 64.47°. Highest reading 87° on the 22nd. There were eight sunless days. The prevailing direction of the wind was S.W. and N.E.—WM. MABBOTT.

April Weather at Hodsock Priory, Worksop, Notts.—Mean temperature of month, 47.1°; maximum in screen, 73.5° on 21st; minimum in screen, 24.8° on 2nd; minimum on grass, 13.3° on 2nd. No. of frosts in shade six, on grass nineteen. Sunshine, 148 hours, or 36 per cent. of possible duration. Difference from average + 18. Rainfall, 1.14 inch; difference from average - 0.60. Rainy days, twelve; maximum fall, 0.21 on the 24th. Rain from January 1st, 8.66 inches; difference from average + 1.81. A fine and dry month, cold at first, but very warm about the 20th. Sharp frosts in last week, heavy gales about the 12th.—J. MALLENDER.

April Weather at Belvoir Castle.—The wind was in a westerly direction twenty days. The total rainfall was 1.31 inch; this fell on fifteen days, and is 0.49 inch below the average for the month. The greatest daily fall was 0.25 inch on the 11th. Barometer (corrected and reduced), highest reading 30.571 inches on the 19th at 9 A.M.; lowest reading 29.232 inches on the 4th at 9 A.M. Thermometers: highest in the shade 73° on the 21st; lowest 23° on the 2nd and 26th. Mean of daily maxima 55.26°; mean of daily minima 36.26°. Mean temperature of the month 45.76°. Lowest on the grass 17° on the 26th; highest in the sun 126° on the 21st. Mean temperature of the earth at 3 feet 43.33°. Total sunshine 178 hours 25 min. There were no sunless days. The 21st inst. was the warmest April day we have had here since April 11th, 1894.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1900.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
April and May.										
Sunday.. 29	S.W.	deg. 51.0	deg. 45.2	deg. 58.3	deg. 31.2	ins. 0.03	deg. 46.5	deg. 47.9	deg. 47.8	deg. 20.5
Monday.. 30	S.S.W.	52.4	51.6	55.6	49.4	0.03	49.2	47.9	47.8	45.2
Tuesday 1	W.N.W.	52.5	46.7	60.6	45.9	—	49.9	48.4	47.8	43.7
Wed'sday 2	W.S.W.	57.7	51.1	65.2	40.7	0.03	51.8	49.4	47.8	31.9
Thursday 3	S.S.E.	49.7	48.3	57.8	42.7	0.09	52.7	50.2	47.8	31.1
Friday .. 4	S.W.	56.2	49.5	62.3	43.7	—	51.3	50.3	48.1	34.5
Saturday 5	S.	62.1	53.2	69.1	48.9	—	53.2	50.5	48.4	40.4
MEANS ..		54.5	49.4	61.3	43.2	Total 0.18	50.7	49.2	47.9	35.3

The first part of the week was dull and cold, the latter part was fine and very warm.



The Royal Horticultural Society.

The New Chiswick.

I AM conscious that after many influential persons have expressed the view that a "new Chiswick" is necessary, it is perhaps presumption on my part to offer a contrary opinion, but it may not be too late even now to ask whether the purchase of a new garden is certainly the best means of celebrating the centenary of the society. We have still twenty years of the Chiswick lease unexpired. Can we not make the best of Chiswick for at any rate some years to come, and devote our energies to obtaining by some means or other the new horticultural hall which is so sadly needed for the fortnightly shows?

From the crowded state of the Drill Hall, both as regards the exhibits themselves and the visitors, it must appear to everyone a necessity that some other place be found before long. This is as necessary for the work of the various committees as for the shows, and I cannot doubt that if £27,000 was raised or promised several years ago, a much larger sum could now be raised, when the society has reached a degree of popularity and success never before known, at least in recent years.—ARTHUR W. SUTTON.

THE meeting on April 25th was very satisfactory in several respects, first because it showed that a vigorous interest is taken in the society's affairs and prospects; and, secondly, because it is evident from the statements made by the president that the council wish to act in accordance with the Fellows' desires. An idea (which is evidently erroneous) had got abroad that the bye-laws were to be rushed through, and that the other important schemes as to new gardens and horticultural colleges were to be carried in a similarly hurried manner.

Seeing that the council could have no other object than the best interests of the society, it was, perhaps, somewhat unfortunate that the bye-laws had not been distributed to all the Fellows before the meeting; it was also regrettable in these circumstances that the proposal was made "that they be taken as read." But then we were told that the wish to save expense was the reason for the first mistake, and the desire to save the time of the meeting was the reason for the second. Economy in the management of a society is most laudable, and we might therefore rest assured that a council that endeavours to avoid expense in such details would not seek to commit the society to the risk of any enormous and doubtful speculations. This, in fact, was proved by the subsequent business.

Although four experts of unquestionable ability had inspected the much-talked-of Limpsfield site for a new garden, had duly reported upon it, and according to the resolution in the notice paper issued to the Fellows it was "the proposal of the council" to purchase the site in question, yet the whole matter was postponed and no definite information could be obtained respecting it. (See page 378.) It is to be hoped that the experts were duly rewarded for the time occupied and trouble taken; in fact I am persuaded that the Fellows would rather that the council had acted "generously" than "economically" in this respect. Still the intention to avoid expense is apparent even here, for though other sites had been proposed, the experts who visited Limpsfield were not required to report upon them.

Would it be too much to expect that while considering financial matters so closely the council will also give a thought to the pockets of the Fellows, and try and arrange that the next meeting to consider questions of so much importance shall take place on the same day as one of the fortnightly meetings?—A SURREY MAN.

Garrya elliptica.

MANY readers of the *Journal of Horticulture* will be indebted to Mr. E. H. Jenkins for the valuable information in the reference to this plant on page 373. That *Garrya elliptica* might well be far more extensively grown no one will dispute, but that it should prove as hardy as Mr. Jenkins states will be a surprise to many gardeners. I have seen it growing in several gardens in various parts of the South of England, but it has invariably been on walls, and usually those with a warm aspect. On one occasion a year or two back I noted a plant in the open in a south country garden, but it looked wretchedly unhappy, and its owner has, I believe, since discarded it entirely.

I should like to ask Mr. Jenkins if he considers that the soil in which the roots are working would have any effect on the hardiness of the growth? Possibly when the roots are in a somewhat rich and moist medium the growths produced would be over-luxuriant—sappy, in fact, and in such condition as would render them peculiarly susceptible of

damage from frosts. The position of the specimens referred to by your contributor seems rather to favour this assumption, as he states they are growing in a poor soil on a bank that is excessively dry in the summer. From Mr. Jenkins' tone I should fancy that the gardener (?) who pruned those *Garryas* would have a sorry time if he came within reach of the writer's vengeance. I can assure your correspondent that such senseless acts are all too frequent in small gardens all over the country, and they arise, as in this instance, from the employment of men who know no more about gardening than do the tools they are supposed to wield with masterly skill. It would have been more than a pleasure to me to see the superb specimens alluded to.—F. ROWE.

Judges and Judging.

I HAVE for many years been connected with the management of horticultural societies, as secretary and in other positions. In all those societies with which I have had anything to do, the same three judges were never selected for any two following shows. Presidents, chairmen, and judges, when chosen year after year soon feel that they have the freehold of the office, and however desirable it may be thought to have changes, it is difficult to do so without giving offence. I think it should be only where there is a very strong reason to the contrary that the same set of officials should be re-elected year after year.—W. B. S.

The Barr Daffodil Cup.

I AM sorry to observe from "S. H. B.'s" note on page 373 that he appears to think I wished in my original note (page 333) to belittle the collection of Daffodils exhibited by Miss Curry at the Drill Hall on April 10th. Nothing was further from my thoughts. I was present at the Drill Hall on the date named, and spent some considerable time at Miss Curry's stand, and was charmed with the variety contained therein and the general excellence of the flowers. That they were worthy of the high honour accorded to them I have no doubt, but I still maintain that the honour attached to the securing of the trophy would have been decidedly greater had there been keen competition. I feel sure your correspondent would find infinitely more pleasure in annexing a prize by the narrow margin of three or four points from other growers than he would when given a walk over. That many other Daffodil enthusiasts could have come forward with collections had they wished to do so, I do not doubt, and I am quite in agreement with "S. H. B." that means could have been taken for hastening the development of the flowers, which would be perfectly legitimate. Let us hope that if next season be similarly late some such methods will be resorted to for contesting the honour of securing the Barrian cup. I have no reason to doubt that Messrs. Barr & Sons would prefer to see a dozen competitors fighting a neck-and-neck race for the trophy they have provided for these charming flowers of spring.—DAFF.

A National Rose Day.

I AM glad to see that you have taken up the subject of a National Rose Day for England, and I have read with much interest the able article of your correspondent, "V. M. H." in the *Journal of Horticulture* of April 26th. Our recognised notable days are at present few, and a moderate addition to them would, in my judgment, prove beneficial rather than prejudicial to the industrial interests of the country. Holding this opinion, I willingly join in the advocacy of a Rose Day in honour of our national emblem. It should, I think, be fixed for the middle or end of June, when Rose blooms are plentiful, and the poorest could acquire the emblem at a very trifling cost.

"How, when, and in what manner the Rose became the emblematic flower of England" I am unable to say. I have searched from the time of the Romans, but from the fourth to the sixteenth centuries can find nothing worth recording down to the time of Charlemagne (ninth century), who desired it to be grown in his garden. Late in the thirteenth century, Count Egmond, son of one of our kings, took for his device a red Rose, and early in the fourteenth century an English coin was struck, stamped with a Rose, and called a rose-noble. Shakespeare's scene in the Temple Gardens (Henry VI., act ii., scene 4) was not, I think, the origin of the adoption of the Rose as our national flower. We must go further back than that. I have in my library badges (roses) in silver bronze of the Lancastrian party, but the card to which they are affixed affords only their recent history. In the various books I possess on the Wars of the Roses there is nothing to enlighten us on this particular point. If we take Shakespeare's scene as history it seems reasonable to conclude that the Rose was then the national flower, and was for this reason adopted as the badges of the contending factions. From any point of view we may, I think, fairly assume that both red and white Roses were grown in London gardens in Shakespeare's time.

But the main point at issue is the date of the adoption of the Rose as our national flower. This, I fear, cannot now be fixed. My researches,

limited, I own, lead me to the conclusion that it was adopted from the Romans. It was the flower of that people, and among the many marks of affection and regard for it, the warriors who had distinguished themselves by gallantry were allowed to wear it on their shields. This, in a warlike age, would bring it under the prominent notice of the natives of Britain in the first centuries of the Christian era, and from this distinguished exhibition of it the emblem was probably adopted. Let me say, in conclusion, that there must be many lovers of Roses with antiquarian tastes possessing wider opportunities and more leisure than I can claim who may be rewarded by a closer and more extended research.—WILLIAM PAUL, *Paul's Royal Nurseries, Waltham Cross.*

Amidst the Tulips.

The Chiswick Trials.

IN the course of a few more weeks the few enthusiasts in florist's Tulips will be glorying or despairing amidst the flowers of the year. It seems to many of us a matter for regret that such magnificent flowers as these should be getting deeper and deeper into a slough of despond as at present appears to be the case, and it will require the strenuous efforts of a number of experts to bring the flower back again to its former glory. As the florist's Tulip is produced by the chief of the remaining enthusiasts it is a flower that is quite perfect in its superb beauty, but unfortunately it is not given to everyone of us to be able to reach the acme of perfection. There are several things that militate against success in their culture, consequently the grower of more limited means and time forswears his allegiance to the florist's Tulips and devotes his energies to the ordinary single and double varieties. These formerly came to us exclusively from Holland, but during recent years at Rush in Ireland Messrs. Hogg & Robertson of Dublin have been experimentalising in the production of Tulips for sale, and with the most gratifying results. The flowers that have been shown from these Irish grown bulbs have invariably been splendid in colour, form, and size.

Needless to say there are many scores of varieties of the so-called Dutch Tulips, many of which are really not worth growing as thoroughly distinct varieties. This season the Royal Horticultural Society has conducted a trial of single and double Tulips in the much belittled Chiswick Gardens. The bulbs were planted in the beds in the square near the majority of the houses, and a further trial of practically the same varieties was made in the beds flanking the centre walk. It was curious as well as instructive to observe how very differently bulbs from the same source behaved in the two positions, and some varieties that in the square were well nigh failures were excellent in the main walk. In other instances the flowers were of about equal excellence in each instance, and, perhaps, it is needless to add others were decidedly the reverse. It has been a most interesting trial, and has taught good lessons as to what Tulips are suitable and *vice versa* for the soil of Chiswick. It may be said to have done more than this, however, for it is safe to assume that the variety which succeeds at Chiswick will luxuriate in gardens that are more favourably situated in respect of soil and atmospheric conditions.

It was on one day during the latter half of last week that this visit was paid, and it was considered particularly fortunate that on the day immediately preceding the Floral Committee of the Royal Horticultural Society had inspected the collection, and from Mr. S. T. Wright, the admirable superintendent, the names of the varieties that had been honoured with three marks were received. There were seventeen varieties recognised on the occasion noted, and these included new and old, single and double varieties. The majority of these are known by every gardener, and probably find a place in nineteen out of every twenty gardens where Tulips are grown. They, as a matter of fact are acknowledged standard varieties that may be relied upon to produce excellent flowers almost, if not quite, every season. It may, however, prove of service if the whole of the three-mark sorts are mentioned in these notes, with brief descriptions to such as may possibly not be generally known. A few are of such conspicuous excellence that they must eventually become universal favourites, and will continue so until raisers provide others that are in some way superior for the adornment of our gardens and our greenhouses.

To select one variety of any plant and say that it is the very best is usually a distinctly risky proceeding, but it may be ventured upon

with the Tulips, putting Maes in the position of honour. This is done because the writer is convinced that the opinion would be supported by the vast majority of people who visited the Chiswick collection. To all intents and purposes it is a perfect single Tulip, and one which must eventually find its place in gardens where these bulbous plants are largely used for bedding purposes. The plant comes about midway between the very tall and the very dwarf varieties in height, and is particularly sturdy in its handsome leafage. The flower is of the largest size, ranking in this respect with Proserpine and Keizers Kroon; the petals are of remarkable substance and of the richest crimson colour; in form the flower is practically faultless. Between Ophir d'Or and Mon Trésor there is very little to choose in point of actual merit, both occupying the front rank amongst yellows. The Dutch growers, it is said, do not recognise any dissimilarity, but the flowers were distinct at Chiswick both in form and very slightly in colour. Each is superb, and may well be grown both in pots and in the beds. The trio named received the distinguishing three marks on the occasion of a previous visit by the committee.

Let us now turn for a brief space to the seventeen selected at the last inspection. The majority of these are, as has been said, known to every grower, and included Joost Van Vondel, Joost Van Vondel white, a superb variety; Cottage Maid, Le Reine, La Belle Alliance, Thomas Moore, and Duchesse de Parma, singles; and Tournesol and Imperator Rubrorum doubles. These, it will be conceded, are all excellent varieties, as is proved by the number of years they have remained in high favour with growers who are ever keen enough to discard old sorts when new ones of distinctly superior merit are brought to their notice.

The remaining eight varieties were again comprised largely of singles, El Toreador being the only double. This is a magnificent Tulip with grandly built flowers of a peculiar colour that may perhaps be most easily described as delicate plum in the body with edges of pale orange; it is undoubtedly one of the best varieties in trial, and ought to attain to a great popularity. Single pure white Tulips of perfect form are by no means numerous, hence the appreciation that was accorded to David Tenier, which in the Chiswick collection is unrivalled. Pink Beauty is slightly misnamed, and might preferably have been designated Rose Beauty, as there is no pink in its flowers. It is really rose and white, and is strikingly effective. A delicately beautiful flower is Queen of the Netherlands, which is soft blush, and is thus in direct contrast to Dussart, as this is a glowing plum crimson; it is a most attractive Tulip. Amiral Renier, white and red, is very distinct, and will find many admirers, as also will Hector, a beautifully formed flower, which is exactly the colour of Pond's Seedling Plum, and has yellow edges. Last of all comes Grand Duc de Russie, a fine variety with purple flaked flowers.

It must not be inferred that these are the only Tulips of premier quality that have been grown at Chiswick this year. Such is by no means the case, as several indispensable varieties, of which we may quote Vermilion Brilliant, Keizers Kroon, and Proserpine as examples, were seen in splendid form. Those named have been chosen simply as illustrative of the fact that the Floral Committee on its most recent visit was desirous of recognising both old and new sorts that at the moment of inspection were considered sufficiently meritorious.—F. W. H.

The Embankment Gardens.

THE provisions that are made by the London County Council for the delectation of the public in various parts of the metropolis are a never failing source of delight to visitors. Go we north, south, east, or west there are parks and gardens in which bedding is carried out in splendid style; while even in the heart of London we find some peculiarly beautiful grounds. Amongst the most centrally situated are the Victoria Embankment Gardens, which strike at right and left angles from Charing Cross Railway Bridge. These grounds are not very extensive as compared with the great parks, but they comprise within their limited boundaries such beds of Dutch Tulips as would be a credit to any place in or out of London.

It need scarcely be said that the difficulties in growing satisfactory plants on this particular portion of our noble Boulevard are by no means limited in number. Trains are constantly crossing and recrossing the river, and they give forth innumerable atoms of burning dust, which



Fig. 107.—EARLY TULIPS.

fall in clouds upon the unfortunate plants below. Then the Underground Railway has a ventilation shaft in the eastern garden, and everyone who has ridden in these trains can form some idea of the noxious fumes that are belched therefrom. Then there are thousands of surrounding chimneys, which do their share towards making the work of satisfactory bedding more and more difficult of attainment. However, the superintendent, Mr. D. Carson, goes quietly onward, and by persistent effort secures excellent flowers.

A few days ago I made an opportunity of visiting the gardens to see the Tulips, in whose praise I had heard so much. The brilliant display of flowers came as a most agreeable surprise, even after the verbal reports that had reached me. There were, for the size of the gardens, considerable numbers of beds, in the major portion of which was one variety only. In the remaining beds and here and there in the shrubby borders were mixed single Tulips, and these produced a bright and striking effect; they were a change from the others, and as such meet with general approbation. Amongst these mixtures were observed Tournesol double, Van der Neer, and Gold Standard, which, with Vermilion Brilliant, are represented in the engraving (fig. 107). There were also, of course, all those about to be enumerated. Of the numerous one variety beds only one was a failure. It was represented by four beds in widely divergent portions of the garden, and of the several hundreds of bulbs not a solitary one produced a flower. Every one had grown strongly and produced fine substantial leaves, but when the bud was about a quarter developed there had come a complete cessation of growth, and the buds gradually shrivelled. The variety was supplied as Couleur Cardinal, which has in previous seasons been quite satisfactory.

This break in the otherwise beautiful series of beds was most regrettable, but was amply compensated for in the brilliance of many of the others. There were hundreds of flowers of such varieties as Proserpine, Chrysolora, Keizer's Kroon, Cottage Maid, Vermilion Brilliant, L'Innocence, Fabiola, Joost Van Vondel, and others that in respect of size and form were beyond criticism, but the colours were scarcely so clear as one is accustomed to find in the same varieties when they are grown in the pure air of rural districts.

While Tulips formed the brighter portion of the display when this visit was paid, there had been also beds of Crocuses and Scillas. Hyacinths were just passing their best, but a splendid bed of King of the Blues still remained. Later we shall have the summer bedding, and if this prove equal in its own way to the feast of Tulips, then will it be satisfactory to everyone concerned in its management, as well as to the public.—WANDERER.

Tulips at Long Ditton.

I LOOKED in at Messrs. Barr & Sons' bulb nursery at Long Ditton the other day to see the early Tulips. One peculiarity of these at this place is that they constitute blocks of colour here and there set into a vast ground of yellow formed by the huge masses of Daffodils. But that very fact served to bring out with marked emphasis the exceeding beauty and richness, as well as welcomeness of these diverse and generally glorious hues. In ordinary garden decoration I much prefer to see Tulips mixed up in several colours in beds as being so much more pleasing, but in such grounds as those of Messrs. Barr and Sons big blocks of one variety tell with diverse and brilliant effect because of the great range of other flowers all around.

How difficult is it to pick out from these early flowering Tulips one as being more beautiful than another. Sometimes the selfs seem best, sometimes the particoloured ones, and of these certainly Joost Van Vondel is a delightful variety. But all singles are lovely. All doubles on the other hand seem ungainly, indeed if there be any flower grown in gardens that seems to have been spoiled by doubling it is the Tulip. About the middle of the month, though necessarily much depends on the intervening weather, the splendid collection of late, and especially the so-called Darwin or self-coloured Tulips, will be at their best. These seem to me to be the most beautiful of all Tulips, and those who may not have seen them should try and do so this year, for they will be found in a huge block, and be wonderfully attractive. Whatever may be the peculiar properties of the Dutch soil, at least it seems difficult to believe that it can grow either Narcissi or late Tulips better than these bulbs are grown at Long Ditton in particular, and throughout Great Britain in general.—A. KINGSTON.

Royal Gardeners' Orphan Fund.

Annual Dinner.

It has become customary during the past few years to hold the occasional dinners of the gardening charities in the Hotel Métropole, but on this occasion a move was made to the Café Monico, Piccadilly Circus. This dinner is regarded as one of the social events of the horticultural world, and the muster on Tuesday evening was decidedly strong, about 130 gentlemen being present. The committee had been fortunate enough to secure the presence of Lord Battersea as chairman, and the company received his lordship with enthusiasm. Among the scores of well-known people observed were Messrs. W. Marshall, W. Cobb, W. A. Bilney, N. N. Sherwood, Leonard G. Sutton, M. Hubert Foquett Sutton, Jas. H. Veitch, J. Gould Veitch, Arnold Moss, H. Balderson, F. Q. Lane, D. Pell-Smith, G. Assbee, G. Monro, Peter Kay, J. O'Brien, H. B. May, J. F. McLeod, G. Gordon, R. Dean, J. H. Laing, J. Douglas, W. Cutbush, R. Cuthbert, S. T. Wright, G. J. Ingram, J. W. Moorman, and T. Bevan.

The dinner was despatched in a satisfactory manner, and the Royal toasts were received with the most intense enthusiasm. But everyone was looking forward to the chairman's speech, as he had come amongst them with the reputation of an orator—a reputation that was certainly maintained, for he had an abundant flow of beautiful language, and here and there a flash of wit. His lordship did not speak at great length, a fact that was evidently deplored by many of those in the International Hall. He expressed the gratification he had felt in being invited to preside, and at the pleasure it gave him to be present, to bring forward and to urge upon them the necessity for doing their utmost for a most admirable institution. He was sure the man of to-day found more pleasures in his garden than had been possible in years gone by, and he thought all would recognise in town and country that there was a rising intelligence perceptible about all connected with horticulture. There was, continued the speaker, another society—namely, the Gardeners' Royal Benevolent Institution—which all ought to support; but he considered that more should be done for the benefit of the orphans. His lordship referred to the interest Sir Francis Bacon found in his garden in the days of the great Elizabeth, and further assured his hearers that in his garden and amongst his plants he found a greater peace and a deeper interest than in politics. Everyone, he said, could grow flowers, though Orchids were beyond the means of many. These might, however, find equal enjoyment in the humbler flowers of the garden. He thought those who could afford to give £400 or £500 for a single Orchid, as he had that day heard of, should give generously of their wealth to the institution. He considered this an age of progress, and brought forward examples to illustrate his points. He was thankful, as a sign of the times, to find formal bedding going out of fashion, due, of course, to the broader and more intelligent views with which ladies and gentlemen were looking at their gardens.

N. N. Sherwood, Esq., the treasurer of the Fund, rose to thank Lord Battersea for his presence and for his eloquence, and to bring to the particular notice of those present a few facts about a society in whose welfare all were interested. He briefly reviewed the work that had been done during the past thirteen years, and characterised it as most satisfactory, but still, he considered, the support of gardeners generally in the form of annual subscriptions ought to be greatly increased. Though he believed them to be underpaid he thought a subscription of 5s. a year could not hurt anyone. He thought head gardeners might have a fund amongst the foremen, journeymen, and labourers; that they might seek permission from their employers to place boxes in the mansion when it was full of guests; and that children might be given boxes for collecting, all of which would tend to increase the funds and therefore the utility of the society. The committee was spending £1000 a year and had an income of £390, and he hoped within the next two or three years to find these figures more in a line.

Mr. Jas. H. Veitch was entrusted with the toast for "Gardeners and Gardening," and he spoke briefly but forcibly. He thought the society largely existed to assist the smaller man, and asserted that he weekly saw several letters offering such men as this less than the local vestries pay for street cleaners. This, said Mr. Veitch, was not encouraging to men either to join or remain in the ranks of the profession. He considered that nothing more striking than the marked revival in gardening could be found, and trusted that some of the present wave of prosperity would fall upon the gardeners. Mr. Richard Dean responded at considerable length. The toast of the chairman was proposed by Mr. H. B. May, and that of "the Press" by Mr. W. Marshall, the latter being responded to by Mr. G. Gordon.

The subscription list must be characterised as exceedingly satisfactory, and proves the deep interest that is taken in the Fund. The total amount was, in round figures, £590, which is only about £30 below last year's total. Towards this sum the Right Hon. Lord Battersea contributed £25, Messrs. de Rothschild & Son 50 guineas, Mr. N. N. Sherwood £50, Messrs. Barr & Sons £28 16s. 6d., Mr. G. Assbee's Covent Garden table £77 15s., Mr. Leonard Sutton £25, Mr. Martin H. Sutton £25, Sir Trevor Lawrence, Bart., 10 guineas, Baron Schröder 10 guineas, Mr. J. T. Gabriel 10 guineas, Messrs. J. Veitch & Sons 10 guineas, Mr. H. Richards 10 guineas, Mr. W. Poupart's table £37 6s., and Mr. Thomas Walters, the Orchid expert, £30 3s. 6d.



An Obnoxious Weed.—It is said that Mr. Monk, M.P. for Gloucester, intends calling the attention of the First Commissioner of Works and the House of Commons to the fact that there is a continual growth of some tiresome weed in the lake in St. James' Park, which, rising to the surface, gives forth an offensive odour. Visitors to the park have often noted this unpleasantness. The lake is periodically emptied and thoroughly cleaned out, but the weed never fails to spring up again in obnoxious luxuriance. Its growth is something of a mystery, because the bed of the lake is of concrete.

Deutzia Lemoinei.—In March, 1896, a first-class certificate was awarded for this handsome shrub by the Royal Horticultural Society, and that the distinction was well merited is evident from the way it has risen to the foremost ranks of flowering shrubs. It is a hybrid between *D. gracilis* and the rare *D. parviflora*, and partakes of the good qualities of both plants. The flowers (fig. 108, page 401) are white and produced with great freedom from almost every bud on the previous year's wood. They are borne in large upright panicles, and last well. For cutting it is superior to *D. gracilis*, and the flowers are seen to greater advantage. Although perfectly hardy it will never be so popular for outdoors as it is for forcing, the flowers opening early and being liable to damage from cold winds or frost. Good plants may be obtained in two years from cuttings, which should be established in pots in autumn to force in an intermediate temperature during winter and spring.—D.

Preserved Pine Apples.—Quantities of canned Pines, as they are called in the trade, have recently been unloaded in our docks, and many hundreds of thousands of tins containing this fruit preserved in syrup are in the hands of dealers. Something like 5,000,000 Pines are exported annually from Singapore, the bulk coming to the United Kingdom. The cultivation and exportation of this fruit are mostly carried on by Chinese. It is nothing for the firms engaged in the trade to prepare 10,000 Pines in a day. The fruits are partially pared, and the juice with which they are surrounded is made from partly ripened Pines, sweetened with white Java sugar. When the tins have been tested they are put up in cases carrying twenty-four each. Some retail traders in this country, says a contemporary, take the Pines out of their tins, and by a simple process turn them into a preserve, which is sold at about double the price of the canned fruit. Put up in glass jars, the preserve obtains a ready sale.

Dahlias.—To what is due the remarkable popularity of the Dahlia seen to-day? Is it the result of the work of the National Dahlia Society, or the introduction of the Cactus section, or have both these things operated in the direction named? Certainly Dahlias are grown now in immense quantities, and are a most important article of commerce to florists. I was in a Dahlia florist's place recently and saw young plants propagated from cuttings by apparently tens of thousands. They seemed to have been nearly all ordered, and were in process of being sent out; yet this is only one such nursery out of fifty perhaps, possibly several fifties, that make Dahlias a speciality, and put their tens of thousands into commerce annually. It would be interesting to learn from some of the Dahlia traders as to which section of these flowers is in greatest demand; no doubt it is the Cactus section, for these seem now to be more widely grown than any others, and that is perhaps no cause for surprise, seeing that whilst all other sections increase in variety slowly these Cactus forms come on yearly by leaps and bounds, and private growers find it difficult to keep pace with the raisers who put several dozens of new ones into commerce each year. Yet is it interesting to find that Shows, Fancies, and Pompons are in great demand relatively, as also are the garden or decorative forms, which seem largely now to consist of rejected Cactus varieties. We must give to the National Society and its shows some credit for the Dahlia's present popularity, for much has been accomplished through its agency. Many of the provincial horticultural societies, too, have done very much to popularise the Dahlia through the establishment of various classes. Evidently the Dahlia is in for a long innings of floral popularity.—A. D.

French Scent Farms.—The work of picking some of the flowers on the French scent farms has begun. The flowers mostly cultivated are the Violet, the Jonquil, and Mignonette, which are picked in February, March, and April. Roses, Orange blossom, Thyme, and Rosemary are gathered in May and June, Tuberoses and Jasmine in July and August, Lavender in September, and Acacias in October and November. But the most important crops of flowers are the Roses and Orange blossoms, the others being mostly grown by small cultivators in the rural districts among their Vines and Olives. One of the largest flower farms is at Seillans, about 2000 feet above the level of the sea, and twenty miles from the coast, upon the southern slope of the Alpes-Maritimes.

The Use of Nettle Fibre.—The American Consul at Glauchau (Germany) reports that Nettle fibre has of late come greatly into favour in the manufacture of fine yarns and tissues. In Germany, there are factories which use these fibres both in spinning and also for ulterior purposes. In Nettle spinning alone over 10,000 spindles and some hundred workmen are employed. The raw material is imported almost exclusively from China, whence 661,500 to 802,000 lbs. are annually sent to Germany. Nettle fibre produces one of the finest tissues obtainable from any known kind of vegetable fibre, and in view of the importance which this seems likely to attain in connection with the weaving industries, it is intended to introduce the cultivation of Nettles, if possible, into the Cameroons. The idea is to prepare the products of this experimental culture at the place where they are obtained, and test them in German factories. Should favourable results follow from these experiments, it is intended to organise Nettle growing enterprises on an extensive scale.—("Indian Review.")

The Wild Arum.—This interesting plant is now unfolding glossy, spotted leaves by the wayside, and shortly the pale green spathe will be conspicuous. The curious, brown, club-shaped column, on cutting open the neck of the spathe, will not have completed its growth, but one may see, says a writer in "The Echo," the separate parts of it in three groups. Below are the female blossoms, each consisting of a single ovary. Above these are the male flowers, each with a single stamen. Then a ring of slender pointed leaves, or flowers. The latter resemble hairs pointing downwards. They appear to guard the narrow entrance, where they form a kind of trap, like the old-fashioned mousetrap—insects can creep down them, but cannot return. These tiny flies may be found within, creeping about, and their coats dusted with pollen from another plant of the species. But they find no pollen, as the female flowers ripen first. Having made a discovery they endeavour to escape, but in vain, the pointed hairs bar the passage. Then after the female flowers have been fertilised the males begin to ripen and shower the golden pollen on the insects below. Presently the hairs wither away, and the road is open for escape. Such is a brief history of Cuckoo Pint. If the spathe is cut open later in the season, small midges are found who seem to have ate ravenously and perished.

Border Polyanthuses.—Persons who gathered their notions of what were good or prize border Polyanthuses from the plants seen at the Drill Hall on the 24th ult., those from Mr. Bennett Poë's garden being an exception, could they have seen the huge bed of these Polyanthuses I saw a day or two since at the Swiss Nursery, Farnham, would have realised the great difference there is between poor strains and good ones, and between plants shown under somewhat artificial conditions and those growing outdoors in pure air and in broad sunshine. I went all the way to Farnham the other day on purpose to see these beautiful spring flowers. It is really surprising to find how wonderfully well they thrive fully exposed to frosts or hot sunshine on a somewhat thin, sandy, and stony soil taken out of the starved heathland of the locality. There were plants of brilliant yellows, whites, mauves, reds, crimsons, and purples that I should as seed stock plants have regarded as worth half a guinea each, because it is only by saving seed from such and sowing from year to year, that stock can be improved. The entire collection formed in the declining sunlight of a May afternoon a most beautiful picture. Already several thousands of strong seedling plants had been put out for next year's flowering. Mr. Mortimer finds on his sand, as I used to find on the Middlesex clay, that sowing seed at the end of August and wintering the plants as he did in boxes in a cold house, or as I used to do in beds outdoors all the winter, and then planting out in April, to be the very best plan. All these seedlings will be large clumps next April, and give a glorious profusion of bloom.—OBSERVER.

The Royal Horticultural Society.

Drill Hall, May 8th.

THE exhibition in the Drill Hall, as is usually the case at the meeting immediately preceding the Temple Show, was not very large. Orchids, though not numerous, were of excellent quality, as were the few fruits and vegetables, and the diversified floral exhibits.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. H. Esling, J. Cheal, P. C. M. Veitch, A. H. Pearson, G. Kelf, A. Dean, S. Mortimer, H. Markham, J. H. Veitch, E. Beckett, J. Smith, F. Q. Lane, G. Norman, J. Willard, G. Bunyard, H. Balderson, G. Wythes, H. Somers Rivers, and G. Reynolds.

Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, sent a fine collection of sixty dishes of vegetables, which included not only early forced varieties, but many well-kept dishes. The Kidney Beans Syon House in pots were carrying a good crop. Carter's Market Spinach, Ellam's Early Cabbage, Carter's Daisy Pea, Cabbages Sutton's Early April, Favourite, and Veitch's Maincrop were noteworthy; as were also good dishes of Leeks, Sutton's Dwarf White Broccoli, Seakale, Early Large Red Tomatoes, Asparagus, Veitch's Perfection Cucumbers, and English Beauty Potatoes (silver-gilt Knightian medal).

Messrs. Laxton Bros., Bedford, had the honour of staging the first fruiting plants of St. Antoine de Padoue Strawberry, a cross between St. Joseph and Royal Sovereign. The variety is certainly a good step towards improving this race of Strawberries. The fruits were large, showing the Sovereign cross, while the habit is still that of St. Joseph, certainly a successful cross. Mr. G. Norman, gardener to the Marquis of Salisbury, Hatfield, sent two boxes of Royal Sovereign Strawberry; the fruits were of immense size, while the colour and general finish left little to be desired (silver Knightian medal). Mr. M. Masterson, gardener to the Earl of Camperdown, Shipston-on-Stour, staged nine dishes of fruit, the specimens of Uvedale's St. Germain being enormous, while the Apples included well preserved dishes of Tom Putt, Blenheim Pippin, Hanwell Souring, Allen's Everlasting, and Nutmeg Pippin, with a good dish of Royal Sovereign Strawberry (silver Knightian medal).

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. H. B. May, R. Dean, G. Reuthe, W. Howe, J. Hudson, J. F. McLeod, R. B. Lowe, R. Fife, C. Jefferies, H. J. Jones, C. E. Pearson, H. J. Cutbush, C. E. Shea, E. H. Jenkins, W. J. James, J. W. Barr, G. Paul, E. T. Cook, C. T. Druery, J. Fraser, E. Mawley, and J. D. Pawle.

Messrs. Jas. Carter & Co., High Holborn, arranged a large semi-circular group of Cinerarias of the cruenta type, with a groundwork of the double forms. The former section was represented by a large variety of colours, and judging from some of the smaller plants, the firm intends producing the bright colours of the ordinary type, which will be a great gain. The double varieties were excellent in habit and variety of colour. From Messrs. J. Laing & Sons, Forest Hill, came a collection of standard Azalea mollis, Viburnums, double Lilacs, Wistarias, and double Prunus, arranged with variegated Acers, Bambusas, and small Azalea mollis; also a Japanese Azalea named Toduguma, a double lilac form; and a variety of hardy flowering plants (silver Banksian medal). An attractive exhibit was staged by Messrs. J. Cheal & Sons, Crawley, comprising a large variety of flowering shrubs, forming a most interesting display. The Pyruses were a special feature, and included P. Halleana, P. Imperial, P. floribunda, P. spectabile fl.-pl., P. floribunda, P. prunifolia, P. Nikita, a white flowering form, sweet scented; P. Malus atro-sanguinea, perfect wreaths of bloom; P. M. Kaido, a delicate pink variety; and P. Niedwitzkiana, a new variety with rosy red flowers, which should make a valuable addition to this class of ornamental trees; the whole was arranged with a variety of ornamental foliage (silver Flora medal).

A very bright and attractive display of spring flowering bulbs were staged by Mr. H. J. Jones, Ryecroft Nursery, Lewisham, which included some beautiful bunches of Spanish Irises, such as Thunderbolt, Baron Von Humboldt, Albambra, Sensation, Snowball, and Chrysolora. Tulips such as T. elegans, T. Picotee, T. vittellina, and T. fulgens, also a good variety of the Dutch forms (silver Flora medal). A most interesting exhibit of hardy flowers were staged by Mr. Amos Perry, Winchmore, Hill, N., which made a capital display. Phlox amœna, Geum Heldreichi, Trollius europæus, Doronicum magnificum, Euphorbia polycroma, Arnebia echioides, and a large variety of other plants were conspicuous (silver-gilt Flora medal). Mr. M. Prichard, Christchurch, Hants, also arranged a table of hardy flowers, which attracted much attention. The collection included large bunches of Euphorbia pilosa major, Phlox canadense, Trollius caucasicus Golden Globe, Rhodiola aurantiaca, and Oxalis enneaphylla (bronze Banksian medal).

Messrs. F. Cant & Co., Braiswick Nursery, Colchester, brought the only display of Roses, which included vases of the old Austrian Copper and Harrisoni, also the new Polyantha Roses Thalia, Euphrosine, and

Aglaia, while a box of specimen flowers included good examples of Madame Cusin, Maréchal Niel, Mrs. S. Crawford, and Rainbow. Messrs. Jas. Veitch & Sons, Ltd., Chelsea, arranged a fine group of spring flowering plants such as Hydrangea Mariesi, Azalea mollis, with beautiful Japanese Acers and other foliage plants, forming a pleasing exhibit. Messrs. Hogg & Robertson, Rush, co. Dublin, staged a large collection of cut Tulips, all grown in first-rate form, the blooms being large and of good substance. The chief varieties were Lac Doree, Silver Standard, Californica, Shusnas, La Panache, Fulgens, Golden Eagle, also a collection of Darwin Tulips, which might have been staged more attractively (silver-gilt Banksian medal). A most interesting exhibit was staged by Messrs. T. S. Ware, Ltd., Feltham. The most noteworthy feature of the exhibit were some Iris Susiana of enormous size and perfect condition, Primulas Sieboldi, japonica, obconica, and farinosa, also a collection of rock and alpine plants, in which the Saxifragas, Gentianas, and Aubrietias were conspicuous.

Messrs. G. Jackman & Son, Woking, contributed a display of hardy flowers, which included some typical Narcissi, large pans of Trillium grandiflorum, Dodecatheon splendens, Daphne cneorum major, and Phlox canadense, also a few choice Alpines, Tulips, Mount Pæonies, and a lovely plant of Clematis Princess of Wales (silver Banksian medal). Messrs. W. Cutbush & Son, Highgate, arranged a large exhibit of spring flowering plants of the decorative type; the Ericas were crowded with flowers, the Boronias elatior were triumphs of skill, Calla Elliottiana, Lilac Madame Lemoine, and the Azalea mollis were also noteworthy. The whole was admirably arranged with Ferns, Palms, and foliage plants (silver Flora medal). Mr. A. Zumbod, gardener to Miss Jekyll, Munstead Wood, Godalming, staged two splendid baskets of Polyanthus Primroses in yellow and white. The colours were artistically arranged and were much admired, the plants clearly exhibiting signs of good culture (bronze Banksian medal). From Messrs. J. James and Sons, Farnham Royal, came a basket of Polyanthus of the gold laced type. Mr. Knowles, Woking, staged a magnificent basket of Daphne cneorum, a perfect mass of rosy pink flowers.

Messrs. Barr & Sons, Covent Garden, sent a collection of Darwin Tulips, which included good bunches of Cordelia, The Sultan, Early Dawn, Purple King, and Loveless, also a gorgeous display of Dutch varieties, with a few hardy alpine and rock plants, in which Viola pedata bicolor played a prominent part (silver-gilt Banksian medal). The same firm also arranged a collection of Daffodils, which included bunches of Sentinel, Stella superba, Prince of Wales, Hon. Mrs. Barton, Dorothy G. Wemyss, P. R. Barr, St. John's Beauty, and Madge Matthews, with many others that have already been noted in these pages. Miss Willmott, Warley, Brentwood, sent vases of N. Bernardi, Philip Hurt, Louise, Poeticus grandiflora, and a delicate form of Ornatus. Messrs. J. Veitch & Sons, Ltd., Chelsea, staged a vase of Ivanhoe. From the Rev. G. H. Engleheart came three seedlings of the Poeticus type, Shelley, a fine form, Sonnet, and Rondo.

ORCHID COMMITTEE.—Present: Norman C. Cookson, Esq. (in the chair); with Messrs. H. J. Veitch, de B. Crawshay, H. Little, H. J. Chapman, W. H. Young, H. A. Tracy, J. Wilson Potter, H. T. Pitt, E. Hill, J. Jacques, T. Rochford, J. Colman, W. Cobb, J. Douglas, and C. J. Lucas.

Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, contributed a magnificent collection of Orchids. The splendidly grown plants were admirably arranged, and formed one of the most attractive collections in the hall. There was a central group of Lælia Latona, with Cattleya Mendeli on the one hand, and C. Schröderæ on the other. Amongst the remaining plants were observed Odontoglossums triumphans, cirrhosum, and crispum; Oncidium ampliatum, pulchellum, concolor, and phymatocarpum; Dendrobiums thyrsiflorum, Alcippe, atro-violaceum, and obscurum; Cattleyas Schilleriana, Daphne, and Lawrenceana; Lælio-Cattleyas Ascania, Wellsiana albida, Zephyra, and highburyensis; Bifrenaria Harrisonæ alba, Epidendrum elegantulum luteum, O'Brienianum superbum, elegantulum, and vitellinum; Chysis langleyensis, Epiphronitis Veitchi, Cymbidium Lowianum, Cypripedium Lawrenceanum, Miltonia flavescent, Rodriguezia pubescens, Spathoglottis aureo-Veillardii, Bifrenaria Harrisonæ, and others (gold medal).

Mr. W. Walters, gardener to Col. Shipway, Chiswick, contributed a small group of Orchids, in which Cattleyas, Lælia purpurata, and Dendrobiums were conspicuous (silver Banksian medal). Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, sent some excellently grown Odontoglossums, Cattleyas, Miltonias, Oncidium, and Lælias (silver Flora medal). Mr. N. P. Bound (gardener to Jeremiah Colman, Esq., Gatton Park, Reigate, sent two baskets of Orchids arranged with Asparagus. The smaller one was silvered wicker, and was lightly arranged with Vandas, Masdevallias, Cattleyas, and Sophronitis grandiflora. The larger contained some excellent Odontoglossums and Cymbidiums. Mr. Bound also showed a superb variety of Odontoglossum Ruckerianum. Mr. W. H. Young, gardener to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, sent some handsome Cattleyas. Amongst other exhibitors of a few Orchids were Messrs. de Barri Crawshay, F. Hardy, A. H. Smee, G. F. Moore, C. Bovill, W. M. Appleton, F. Sander & Co., and R. I. Measures.

One of the most superb groups of Orchids in the hall was that from Mr. Geo. Reynolds, gardener to Leopold de Rothschild Esq., Gunnersbury

Park, Acton. It consisted wholly of magnificently grown plants of *Vanda teres*. There were several dozens of plants in boxes, with a background of Palms, and a foreground of Palms and Ferns. The flowers were perfect in all respects, and the group was probably the first of its kind that has been seen at the Drill Hall (gold medal). Mons. L. Linden, Brussels, arranged some magnificently grown *Odontoglossums* (silver Flora medal).

Certificates and Awards of Merit.

Asparagus Sprengeri variegatus (F. Sander & Co.).—The typical *Asparagus Sprengeri* is well known and very highly appreciated, and the varietal name accurately describes the new-comer (first-class certificate).

Odontoglossum crispum aureum rosefieldiense (de Barri Crawshay).—A beautifully formed variety that is almost wholly yellow; practically the only white is on the lower portions of the petals (first-class certificate).

Odontoglossum crispum Pittianum (F. W. Thurgood).—A grand variety; the colour is white, with immense chocolate blotches (first-class certificate).

Odontoglossum crispum tessellatum (L. Linden).—A small but beautifully coloured variety. The ground is white, with superb brown markings (award of merit).

Rhododendron Directeur Rodigas ((J. Veitch & Sons).—A charming variety with salmon pink flowers, borne in good trusses. There are numerous brown spots on the upper portions of the flowers (award of merit).



FIG. 108.—DEUTZIA LEMOINEI. (See page 399.)

Camellia Devonia (R. Veitch & Son).—A fine single white variety of much merit (award of merit).

Cucumber Ideal (E. Beckett).—A medium-sized, straight, dark green fruit with practically no neck (award of merit).

Cypripedium Phæbe (W. M. Appleton).—This is a hybrid from *C. philippinense* and *C. bellatulum*. The dorsal sepal and petals are cream with purple crimson lines, the pouch is dull cream (award of merit).

Geum montanum aurantiacum (A. Perry).—A beautiful orange-coloured variety of a well-known plant (award of merit).

Lælia purpurata Ethel Grey (W. H. Young).—A handsome variety. The sepals and petals are almost pure white; the magnificent lip is rich dark crimson (award of merit).

Lælio-Cattleya Hyeana (J. Veitch & Sons).—This is a bigeneric hybrid from *Cattleya Lawrenceana* and *Lælia purpurata*. The sepals and petals are rich rose purple, and the lip intense crimson purple (award of merit).

Rhododendron Coombe Royal (R. Veitch & Son).—A handsome Himalayan hybrid. The colour is delicate blush, with sparse crimson spots (award of merit).

Tulipa Borszczowi (Miss Willmott).—A most attractive species. The inner colour of the flower is bright yellow, as is the reverse of the inner segments; the reverse of the outer segments is brick red (award of merit).

Tulipa Kolpakowskiana (Miss Willmott).—A brilliant glowing scarlet flower of peculiar attractiveness (award of merit).

Tulip Hector (Hogg & Robertson).—A superb variety with large flowers of the greatest substance. The colour is that of Pond's Seedling Plum edged with gold (award of merit).

Tulip Pink Beauty (Hogg & Robertson).—A grand early variety. The large flowers are bright red and white (award of merit).

Turnip Carter's Early Forcing (E. Beckett).—A handsome, long, pure white variety of first quality (award of merit).

Notes on the Chiswick Trials.

MR. ARTHUR SUTTON writes as follows: It may not be inopportune, when the question of a new Chiswick is occupying the attention of the Fellows of the Royal Horticultural Society, to ask you to find a space in this week's issue of the *Journal of Horticulture* for the accompanying notes on the Chiswick trials. These notes I communicated, with the consent of the president, to each member of the council in March last, and Sir Trevor Lawrence then suggested that there would be no objection to my publishing them if I cared to do so.

For the last twenty years I have taken a personal interest in these trials, and have had ample opportunity of watching them both as a member of the Fruit Committee and as an ordinary Fellow of the society. My connection with horticulture alone would be sufficient inducement to keep myself in touch with the various trials conducted at Chiswick from year to year.

I have therefore been able to appreciate the conscientious work done both by the officials at Chiswick, and those members of the Fruit Committee who have attended the meetings at Chiswick, and in any remarks I may make I wish very clearly to say that I am sure they have, one and all, carried out the tasks allotted them as ably as the circumstances of the case permitted.

I am confident, however, that all those members of the seed trade who have themselves devoted much time to raising novelties or testing novelties on a large scale, would agree with me that in recent years no series of trials at Chiswick of vegetables has been so complete as to warrant the committee in awarding a certificate to any so-called new variety on the ground that it is distinct from or superior to existing varieties. I know this will seem a very sweeping assertion, but at the present moment, when it is suggested that new gardens should be acquired for the purpose of continuing these trials, I think it essential this fact—if it be a fact—should be brought to the notice of those who have the framing of the society's policy, even at the risk of appearing to press unduly the opinion of one who has only just joined the council.

The reasons for this opinion are:—

(i) In no case do the trials at Chiswick contain anything approaching the number of standard sorts which an experienced seedsman knows to be essential if the superiority of a so-called seedling or novelty is to be accurately gauged.

In the case of Peas, I should myself consider a standard collection of 200 or 250 varieties none too many with which to compare a reputed novelty before taking the responsibility of offering it as new, distinct, or superior.

Again, in the case of Potatoes, the standard or reference collection should contain from 250 to 300 varieties to enable even an expert to adjudicate upon a so-called new seedling submitted for award.

By way of illustration I may take the following figures from my trial book for 1899.

Peas.—Total number of trial rows	...	...	...	...	...	684
Including seedlings for examination	...	...	...	...	...	288
Including other distinct varieties	...	...	...	...	...	155
Potatoes.—Total number of trials	...	...	...	...	...	1227
Including seedlings for examination	...	...	...	...	...	466
Including other distinct varieties	...	...	...	...	...	403

At Chiswick last year the numbers were—

Peas.—Old sorts for comparison	...	...	...	...	...	9
New varieties for award	...	...	...	...	...	46
Potatoes.—Old sorts for comparison	...	...	...	...	...	25
New varieties for award	...	...	...	...	...	46

Trials of other vegetables require to be tested in the same complete and exhaustive manner if any definite results are to be obtained. I do not care to refer again to my own trial book, but the following figures give some idea of the amount of labour which would be required at Chiswick if trials of vegetables and flowers were carried out with a view of determining whether so-called novelties or seedlings were superior to those already existing:—

Tomatoes.—Total number of trial rows (including 87 separate varieties)...	243
Lettuces.—Total number of trial rows (composed of 198 rows spring-sown for summer cutting in 94 varieties, and 78 rows autumn-sown for spring cutting in 70 varieties)	276
Cauliflowers.—Total number of trial rows (composed of 164 rows spring-sown for autumn cutting in 57 varieties, and 71 rows autumn-sown for spring cutting in 50 varieties)	235
Onions.—Total number of trial rows (composed of 237 rows spring-sown for autumn use in 62 varieties, and 99 rows autumn-sown for spring use in 50 varieties)	336
Cabbages.—Total number of trial rows (composed of 255 rows spring-sown for autumn cutting in 75 varieties, and 180 autumn-sown for spring cutting in 70 varieties)	435
Broccoli.—Total number of trial rows (including 46 separate varieties)...	157
Dwarf and Runner Beans.—Total number of trial rows (including 136 varieties, of which 40 are not yet in commerce)	255
Broad Beans.—Total number of trial rows (including 35 varieties)	85
Asters.—Total number of trial rows (including 270 varieties)	367
Stocks.—Total number of trial rows (including 161 varieties)	187
Sweet Peas.—Total number of trial rows (including 220 varieties)	253

(ii.) Secondly (and I wish to say it with all courtesy to those who form or have formed the Fruit Committee) it is practically impossible for the committee, as a body, to be possessed of the requisite technical or expert knowledge to enable them to judge accurately.

Even those who are practical gardeners have never grown or seen growing in private gardens anything like all the varieties in commerce, and cannot therefore know personally the comparative merits of so-called novelties. I think I am within the mark in saying that a gardener in even a large establishment seldom grows more than fifteen to twenty-five varieties of Peas. Besides this, a gardener generally (not universally) contents himself with the varieties offered by one seedsman, and knows but little of those offered by the many others in the trade.

Unless the members of the committee were almost daily inspecting the trials of the larger seed houses, where for the necessities of the trade it is essential that all existing sorts should from time to time be tested, and where the Pea trials number from 500 to 1000 rows, they could not obtain the technical knowledge required.

(iii.) Thirdly, because it is not sufficient to visit trials two or three times during the season. To ascertain the comparative merits of new and old varieties, Pea trials need to be closely watched day by day, from the day they bloom until after they are matured, a period of six to eight weeks elapsing between the earliest and latest sorts, according to the character of the season. And what is true of Peas is true more or less of other vegetables.

(iv.) Because only comparatively a small number of the committee can find time to go to Chiswick even two or three times during the season.

It may then fairly be asked why, if such is the case, have none of those most intimately concerned ever called the attention of the council to the doubtful utility of these trials?

I can only suppose that it was felt that the council might not readily give up what was generally supposed to be a valuable part of the society's work; also that Chiswick existed, and it was supposed to exist for these trials (and other purposes), and having their own trials conducted at very great outlay of money, time, and energy, it would appear ungenerous to call in question the self-denying work of very able men.

For myself, I may say that it is only the proposal to move to another spot where similar trials would be conducted, and where the committees could only attend with still greater inconvenience, that has led me to express my views.

I have gone thus fully into the details of various trials in order to explain my reasons for thinking that the Chiswick trials do not and could not, as at present carried out, confer any real benefit on horticulture, or at any rate no benefit commensurate with the annual cost—about £1400. If the present garden is retained, or a "new Chiswick" acquired, I would suggest that, instead of comparative trials, standard collections of the leading vegetables and flowers should be grown, so far as space and funds permit, for the interest and information of the Fellows. I do not, however, forget that the gardens exist for other purposes besides trials of vegetables and flowers, but I am not at all sure that the collection of fruit trees, Vines, &c., is so complete and up to date as to be a reliable guide to Fellows wishing to learn the best sorts for planting.

Iris fimbriata.

ALL the Irises possess special attraction for plant admirers, and though many are more showy than fimbriata, yet this has a graceful habit, and is so floriferous that it can be employed with good effect in several ways. Like numerous other members of the family its flowers are, however, somewhat fugacious, and are not adapted for cutting. The plant is compact in habit, and is consequently well suited for culture in pots, and being rather tender is safer in a greenhouse than outside—in fact comparatively few positions suit it except in the warm southern and western counties, where I have occasionally seen it tried, but not with very encouraging results.

For some years I have grown it entirely for greenhouse decoration, and as I have a good stock by forwarding some and retarding others, I manage to maintain a fairly long succession of flowers. These (fig. 109) are of such a soft pale bluish mauve, relieved by orange markings, that they appear very distinct arranged with other plants having more brightly coloured flowers. A moderately light loam, ample root space, and plentiful supplies of water during growth and flowering are the chief points in its culture, and require special attention.—A.

National Auricula Society, Northern Section.

May 4th.

THE annual exhibition was held in the Coal Exchange, Manchester, on Friday, May 4th. The date chosen for the show was perhaps, on the whole, the best that could have been selected, for although the edged varieties would have been better with a few days' more growth, the quality of the selfs, Alpines, and Polyanthus left little to be desired. The exhibitors were, with the exception of Mr. A. Brown, of Birmingham, all northern growers, and they turned up in good numbers. The competition in the Alpine classes was very keen, but edged Auriculas were not well shown, as, with the exception of those staged by Mr. Lord, of Todmorden, they seemed to be a full week short of their best. It is hard to say how this comes about, for Todmorden cannot be considered an early locality. What Mr. Lord's secret is one can only guess, but there is little doubt that if the superb varieties raised by Messrs. Horner and Simonite were procurable, Mr. Lord would provide us with a floral treat that we should remember a very long time.

There are, however, signs that others can raise Show Auriculas besides Messrs. Horner and Simonite, and it was pleasing to see Mr. Lord's green edged seedling Abraham Barker in even better form than last year. It has now won the premier two years in succession. Mr. Midgley also showed a most promising seedling self, with almost all the properties of a first-rate variety. Mr. Horner was represented chiefly by seedlings, of which may be mentioned Waterfly, a large and handsome white edge, but sadly rough as shown, probably through being too young, as one pip was flat enough; Lysander, a magnificent green edge; Eurydice, an almost perfect black self; Red Rover, a fine red self; Ossian, green edge; Orient, a perfect model of a green edge, but shown too young; Favourite, a grand dark purple self; Dryad, a nearly black self; Melanie, deepest brown self, but not flat enough as shown; and Gauntlet, a grand dark red self of exquisite shape and proportions, perhaps the finest self ever raised; if it has a fault it is that the anthers are insignificant, causing the tube to look a little too naked. Miranda, shown by Mr. Simonite, was a white edge short of body colour, giving the flower a wan and ghost-like appearance. Cleopatra is a pleasing self of a novel plum-purple colour, a seedling of Mr. Simonite's. Achilles, a bold and handsome green edge, but like many other large growing sorts not without faults, was well shown by Mr. Gorton. Mr. Midgley had, besides the selfs mentioned, a seedling green edge, which was well grown and with some good properties, but the paste was too narrow, and the flower too much cupped to ever make a first-class variety it is to be feared. Mr. Midgley also showed a white edge seedling, very large and fine but rather rough.

It was fortunate that there were so many novelties to take one's attention, for the older varieties were mostly far from good. Geo. Lightbody, Geo. Rudd, and Acme were perhaps the best. In Alpines there were many good things, among which may be mentioned Dr. Durnford, Pluto, Nonesuch, Cecil Rhodes, Prince Charlie, Patience, Beauty, and one or two of Mr. Gorton's seedlings. It is to be regretted that the Auricula Society have never formulated rules for judging Alpines, and as a consequence everything depends upon the personal inclinations of the judges, whether one is high or low in the prize list. For instance, there is the exhibitor who brings enormous plants, each carrying ten or twelve pips of large and more or less rough flowers; and there is the grower who shows smaller plants, with perhaps only five medium sized pips, but flat and well proportioned; and the question is, which of these is to win? Mr. Lord certainly solved the problem by combining both size and quality, but it was not pleasant to see the refined exhibits of Messrs. Gorton and Brown relegated to obscure places by plants whose chief recommendation was size and good growth. Another matter that should be mentioned is the fact that some exhibitors seem to forget that Alpines should be shaded, and it would be well if they discarded such varieties as Dr. Knott and Emir, for handsome as these varieties are, they do not possess this important property.

In Polyanthus the chief thing of note was that they all came from Middleton, Lancashire, and that there were growers there who could still produce good seedlings; but why should Middleton have the monopoly of Polyanthus? The judges, Messrs. Mottershead & Geggie, of Sale, Cheshire, made the following awards:—

SHOW AURICULAS.

Class 1. *Six dissimilar Auriculas*.—First, Mr. T. Lord, Todmorden, with Rev. F. D. Horner, Abraham Barker, Mrs. Dodwell, Acme, George Lightbody, and Mrs. Potts; second, Rev. F. D. Horner, Burton in Lonsdale, with Shirley Hibberd, Rev. F. D. Horner, Lysander, Red Rover, Eurydice, and Waterfly; third, Mr. W. M. Shipman, Altrincham, with Rev. F. D. Horner, Abbé Liszt, Heatherbell, Beauty, Ruby, and Mrs. Potts; fourth, Mr. J. W. Bentley, Middleton, with Rev. F. D. Horner, Hibernia, George Rudd, Acme, Gerald, and Red Perfection.

Class 2. *Four dissimilar Auriculas*.—First, Mr. Lord with Rev. F. D. Horner, Mrs. Potts, Geo. Lightbody, and Acme; second, Mr. W. H. Midgley, Halifax, with Geo. Lightbody and three seedlings; third, Mr. B. Simonite, Sheffield, with Dinham, Ossian, Miranda, and seedling; fourth, Mr. W. M. Shipman, Altrincham, with Dr. Kidd, Abbé Liszt, Geo. Rudd, and Mrs. Potts.

Class 3. *Pairs of Auriculas*.—First, Mr. T. Buckley, Staleybridge, with Geo. Rudd and Acme; second, Miss Woodhead, Halifax, with Rev.

F. D. Horner and Acme; third, Mr. R. Gorton, Eccles, with Achilles and Ruby; fourth, Mr. B. Simonite with Heatherbell and Cleopatra; fifth, Mr. W. Kershaw, Ashton-under-Lyne, with Heatherbell and Rev. F. D. Horner; sixth, Mr. J. Stelfox, Staleybridge, with Heatherbell and Sapphire; seventh, Mr. A. R. Brown, Birmingham, with Acme and Ruby.

Class 4.—No exhibit.

Class 5. *Single Green Edges*.—First, Mr. Lord with Abraham Barker; second, Rev. F. D. Horner with Orient; third and fourth, Mr. Lord with Rev. F. D. Horner and Mrs. Henwood; fifth, Rev. F. D. Horner with Shirley Hibberd; sixth, Mr. Gorton with Achilles; seventh, Mr. Simonite with Ossian; eighth, Mr. Gorton with J. Hannaford.



FIG. 109.—IRIS FIMBRIATA.

Class 6. *Single Grey Edges*.—First and second, Mr. Lord with Geo. Lightbody and Geo. Rudd; third, Miss Woodhead with Rachel; fourth, Mr. Lord with Richard Headly; fifth, Mr. Gorton with Lancashire Hero; sixth, Mr. Bentley with Dr. Kidd.

Class 7. *Single White Edges*.—First, second, third, fourth, and fifth, Mr. Lord with John Simonite, Traill's Beauty, Mrs. Dodwell, Acme, and Elaine; sixth, Miss Woodhead with Smiling Beauty; seventh, Mr. Lord with Heatherbell; eighth, Mr. Simonite with Miranda.

Class 8. *Single Selfs*.—First, Rev. F. D. Horner with Favourite; second and third, Mr. Lord with Mrs. A. Potts and Gerald; fourth, fifth, and sixth, Rev. F. D. Horner with Dryad, Melanie, and Gauntlet; seventh, Mr. Simonite with Cleopatra.

Premier Auricula of the whole show.—Mr. Lord with Abraham Barker.

ALPINE AURICULAS.

Class 9. *Six dissimilar*.—First, Mr. Lord with Dr. Durnford, Pluto, John Ashton, Bright Eyes, Judith, and Patience; second, Mr. Beswick (Middleton), with Nonesuch, John Allen, Dr. Durnford, John Ashton, Dr. Knott, and a seedling; third, Mr. Stelfox with Dr. Durnford, John Allen, John Ashton, Forest Queen, Bright Eyes, and seedling; fourth, Mr. Brown with A. W. Jones, Mrs. Martin Smith, Mabel, W. L. Walker, Winifred, and J. J. Keen; fifth, Mr. Wood with Dr. Durnford, Dr.

Knott, John Ashton, Emir, John Allen, and Forest Queen; sixth, Mr. R. Gorton with Miranda, Sweet Lavender, Cecil Rhodes, Mrs. Barnett, Dreadnought, and Dean Hole.

Class 10. *Four dissimilar Alpines*.—First, Mr. Lord with Dr. Durnford, John Ashton, Patience, and Pluto; second, Mr. Beswick with Bright Eyes, Nonesuch, John Allen, and John Ashton; third, Mr. Puckley with Dr. Knott, John Ashton, Dr. Durnford, and Bright Eyes; fourth, Mr. Stelfox with John Ashton, Bright Eyes, John Allen, and seedling; fifth, Mr. Gorton with Sweet Lavender, Cecil Rhodes, Prince Charlie, and Miss Shaw; sixth, Mr. Bentley with Mrs. Martin, Bright Eyes, Dr. Durnford, and John Allen.

Class 11. *Pairs of Alpines*.—First, Mr. Bentley with Dr. Durnford and Bright Eyes; second, Mr. Buckley with Dr. Knott and Evelyn Phillips; third, Mr. J. Goodier, Middleton, with Dr. Durnford and John Allen; fourth, Mr. W. Stringer, Middleton, with Dr. Knott and Bright Eyes; fifth, Mr. G. Thornley, Middleton, with seedlings.

Class 12. *Pairs of Alpines* (maiden growers).—First, Mr. Goodier with Dr. Durnford and John Allen.

Class 13. *Single Yellow Centres*.—First, Mr. Gorton with Prince Charlie; second, Mr. Lord with seedling; third, Mr. Beswick with Dr. Durnford; fourth, Mr. Lord with John Allen; fifth, Mr. Gorton with Seedling 91; sixth, Mr. Stelfox with seedling.

Class 14. *Single White Centres*.—First, Mr. Lord with Patience; second, third, and fourth, Mr. Beswick with Beauty, John Ashton, and seedling; fifth, Mr. Lord with Exonian; sixth, Mr. Gorton with Seedling 118.

Premier Alpine in the exhibition.—Mr. Lord with Pluto.

POLYANTHUSES.

Class 15. *Three black ground Polyanthuses, dissimilar*.—First, Mr. Beswick with Mrs. Brownhill, Tiny, and Exile; second, Mr. Stringer with Trilby, Tiny, and Mrs. Brownhill; third, Mr. Thornley with Mrs. Brownhill, Exile, and Cheshire Favourite; fourth, Mr. T. Oldham with Trilby, Tiny, and Mrs. Brownhill.

Class 16. *Three red ground Polyanthuses dissimilar*.—First, Mr. Thornley with Middleton Favourite, George IV., and Sidney Smith; second, Mr. Beswick with Middleton Favourite, William IV., and seedling; third, Mr. Stringer with Middleton Favourite, Sidney Smith, and William IV.; fourth, Mr. Oldham with Middleton Favourite, Sidney Smith, and seedling.

Class 17. *Single Plants, Black Grounds*.—First, Mr. Beswick with Mrs. Brownhill; second, Mr. Oldham with Tiny; third, Mr. Thornley with Cheshire Favourite; fourth, Mr. Oldham with Trilby; fifth, Mr. Thornley with Exile.

Class 18. *Single Plants, Red Grounds*.—First, second, and third, Mr. Thornley with George IV., Middleton Favourite, and Seedling; fourth, Mr. Beswick with Seedling; fifth, Mr. Stringer with Sidney Smith.

Premier Polyanthus in the exhibition.—Mr. W. Stringer with Mrs. Brownhill.—JAMES W. BENTLEY.

The Young Gardeners' Domain.

Begonia Gloire de Lorraine.

THIS beautiful Begonia is very useful for winter flowering, and makes a grand display for quite three months when arranged amongst other plants in the flowering house. It looks very effective when grown in baskets suspended from the roof of a plant house, and it is also useful for table decoration when used with spikes of Dendrobium Phalaenopsis Schröderianum or Calanthe Veitchi, lightly arranged above. B. Gloire de Lorraine may be propagated from cuttings, several of which can be placed round the edge of a 4-inch pot, in good sandy soil, and plunged in a propagating case with a good bottom heat, where they will soon take root. They can also be propagated from leaves placed edgewise in pans of sandy soil plunged in a good bottom heat. The pans should be covered with sheets of glass, these being turned over every day to let the condensed moisture escape, as if this is allowed to drip on to the leaves it often causes them to decay.

When the cuttings or young plants are well rooted they should be placed into 3-inch pots, using a compost of peat, loam, leaf mould, and silver sand in about equal parts, and then be placed on a shelf in an intermediate house. Watering must be very carefully attended to. When the plants are well established in these pots they ought to be transferred into clean well drained 5-inch pots. The plants should be neatly staked with small green stakes, using six or eight in each pot, as they well repay a little extra trouble in this respect. If specimens for suspension are desired, four plants may be placed in a basket or large Orchid pot, three near the edge of the basket or pot, and allowed to hang naturally round the sides; the other plant should be placed in the centre and neatly staked.

Before flowering the plants ought to be kept in a moist intermediate temperature, where they will get plenty of light, but be shaded from the direct rays of the sun. When flowering they should be placed in rather a cooler and drier temperature to prolong the flowering period. Liquid manure and clear soot water may be given with advantage about twice a week.—F. W. P.



Hardy Fruit Garden.

Mulching Fruit Trees.—The practice of mulching fruit trees has many advantages. It prevents rapid evaporation from the soil of much valuable moisture during hot, dry weather, and tends to keep the roots cool in consequence. When moisture is available in the surface soil the fine roots will remain there instead of descending to a lower level. The character of the subsoil may prove inimical to the welfare of the roots if they pass into it in search of moisture. Hence the chief advantage of mulching lies in keeping the roots ramifying near the surface. Weakly trees are benefited, also trees bearing crops, especially when the burden is heavy.

When to Mulch.—During cold, wet periods in winter and spring it is obvious that a thick coating of manure over the roots of young fruit trees, especially in heavy, clayey land, is not conducive to healthy growth, and should be avoided. The best period for laying on a general mulching is in May, when the soil has naturally become warmed by the sun. Mulching young fruit trees immediately after planting is not always good unless the proper material is used. Winter dressing with decomposed manure is good for old trees, but cannot be recommended for young trees, as it naturally prevents the soil becoming warmed because of its close texture. Perhaps the best time to apply it is immediately after a good rainfall in May, at which time the soil is both warm and moist. Immediately following a copious watering is also a suitable time, more especially in the case of wall trees, as the soil over the roots is so fully exposed to drying influences. Light soils need mulching sooner than heavy ground.

Material for Mulching.—For trees well established and bearing good crops the mulching will not only conserve moisture but contains fertilising matter that the rain or artificial waterings will wash into the soil. Short, decomposed manure is, therefore, good for these, and also for weakly trees needing some assistance to impart vigour; vigorous young trees do not require stimulation at the roots, yet need some material to insure the soil being kept in a medium state of moisture. Littery manure will effect this, preventing the escape of surface soil moisture in light soils, and cracking of the surface, common on heavy ground. If the soil round young trees cannot be mulched with manure from various causes, the next best thing to do is to maintain the surface loose with the hoe. Short, lumpy material forms a good medium for mixing in any artificial fertiliser for the benefit of the trees, and also assists in distributing economically applications of liquid manure or water. The mulch should extend as far as the roots spread out from the bole.

Mulching Strawberries.—Strawberries in a fruiting condition should always be mulched at this season with a mixture of short and long manure. Liquid manure can be poured over the mulching around the plants, and it will assist the fruit to develop. On light and shallow soils a mulching will be beneficial even to young plants.

Apricots.—A preliminary thinning may be given to the trees as soon as the fruit has attained to the size of horse beans. All the worst-placed fruit should first of all be removed, and those which are improperly fertilised known by their backwardness in swelling. Also shorten foreright shoots not wanted to lay in to three leaves, and cut out entirely ill-placed growths. This timely attention at frequent intervals results in the trees being kept well regulated as to growths and the fruit well proportioned. Vigorous trees may be allowed to carry the most fruit. Give the final reduction after the stoning period, which is a critical time.

Peaches and Nectarines.—Cutting out ill-placed shoots is still an essential operation. Lay in the successional bearing shoots in the proper direction. When disbudding leave a growth above the fruit in order that sap may be attracted through the shoot, some of it being diverted to the fruit. Commence to thin the fruit early, removing the inconveniently situated as soon as possible. The border containing the roots often becomes dry quickly at this season, hence to insure the fruit swelling regularly fortify the soil with moisture and food.

Training Young Fruit Trees.—The chief care just now in managing young specimens, either on walls or in the open, is to see that growths or shoots are being formed in suitable positions for forming the main branches. Secure growths as near as possible at regular distances apart, and train them in the desired direction, equalising the vigour of trees by the simple expedient of depressing luxuriant shoots, and training weak growths in a perpendicular direction. This is, of course, only temporary, and when the desired end is secured lay in the shoots in their proper positions. While retaining and encouraging the principal shoots some attention must be given to removing superfluous and crowded growths or stopping extensions. Trees liable to insect pests should be well syringed on warm afternoons. This will tend to keep down such, and at the same time encourage good growth. Lateral shoots starting from the main branches of wall trees should be shortened at the fifth or sixth good leaf.

Fruit Forcing.

Cherry House.—The Cherries, now ripening rapidly, must be kept dry, but the surface of the borders should be damped with the syringe occasionally, air being admitted constantly, or condensation will seriously affect the fruit. The moisture of the border is apt to be miscalculated by the syringing keeping the surface damp, hence it should be examined and water supplied to keep the soil moist down to the drainage. Tie in the shoots as they advance, and stop those required to form spurs at about the fifth leaf, pinching sub-laterals to one joint. Black aphides must be kept under by dipping the shoots affected in tobacco water, gently rubbing them with fingers, or their shining bodies will throw off the decoction and escape. Ventilate freely on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to insure a circulation of air. Netting will be necessary over the ventilators to prevent birds attacking the Cherries. Trees in pots should be well supplied with water.

Cucumbers.—Plants in bearing all the winter will now be showing signs of exhaustion, and had better be removed and their places filled with others without delay. Assist young plants which show signs of weakness by removing the staminate flowers and the first fruits, stopping at every third or fourth joint, removing all weakly superfluous growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially for houses facing south, but shade only to prevent flagging. Houses with the roof-lights facing east and west will not require shading, or only in the afternoon. Little or no fire heat will be required by day, shutting the valves about 8 A.M., and opening them again about 4 P.M., or later, keeping a good moisture by damping the floors.

In Pits and Frames.—Sow seed to secure plants for placing in pits and frames, a fair amount of bottom heat being necessary, which is secured by using the less decomposed material from exhausted hot-beds, with about a fourth of fresh material. Ventilate moderately if the weather is cold, and close as early in the afternoon as safe, running up to 90° or more, and employ night coverings. Attend to the linings with a view to maintain good bottom heat, but be careful to avoid rank vapour.

Peaches and Nectarines.—*Houses Started at the New Year.*—The fruit is about completing the stoning process, but it must not be subjected to a higher temperature than 60° to 65° by artificial means, commencing to ventilate at 65°, and not allowing 75° to be exceeded without full ventilation. If the fruits are too numerous remove the smallest, allowing one fruit to each square foot of trellis covered with foliage, leaving them a little closer on strong wood, and less on the weaker. By apportioning the crop to the vigour of the parts of a tree the evenness of the growths may be maintained. Tie the shoots as they advance, removing the superfluous growths, as it is important no more be retained than can have exposure to light and air. Draw the leaves aside or even shorten them so as to expose the fruit to light, raising such as require it on thin laths placed across the wires of the trellis with their apices to the sun.

After stoning maintain a good moisture in the house, and water the inside border copiously, which in well-drained soil will be required about once a week, mulching the surface with about an inch thickness of short, rather lumpy manure. If the fruit is not required ripe as soon as practicable, continue 60° to 65° as the night temperature, 65° artificially by day in dull weather, 70° to 75° with sun heat, closing at the latter with plenty of atmospheric moisture. In a high night temperature of 70° to 75° by artificial means, 80° to 85° or 90° from sun heat, and moist atmosphere. Peaches swell to a great size after stoning, but they are not usually so high-coloured or so well flavoured as those ripened in less heat and moisture, and with free ventilation.

Houses Started Early in February.—The fruit, being in the early stages of stoning, should be reduced to two on strong shoots and one on the weaker, not leaving too many, for there is danger of their not stoning in that case, while they will be small if they should stone. Retain in all cases the fruit best situated for receiving air and light. Thin the shoots where crowded, pinching laterals to one leaf, and secure the growths to the trellis as they advance. Syringe the trees twice a day in bright weather, but once only in dull, and not then if the foliage does not become dry before nightfall, or is found dripping with moisture in the morning. The temperature may be kept at 55° to 60° at night, and 60° to 65° by day, ventilating from 65°, and fully between 70° and 75°. Supply water to the roots as required, affording weakly trees and those carrying heavy crops top-dressings of chemical manure occasionally, say every fortnight or three weeks, washing them in moderately, or afford liquid manure alternately with the waterings.

Trees Started in March.—Thin the fruit now that it is swelling freely, and choice can be made of the most promising for the crop. Reserve those on the upper side or front of the trellis, two or three on strong shoots will be ample to leave, and proportionately fewer on weaker growths. Remove all superfluous shoots gradually, retaining those only for attracting the sap to the fruit, which stop at two or three good leaves, and those from the base of the present bearing wood for furnishing fruit another year, with such extensions as are necessary. Train the growths as they advance, securing them loosely to the trellis. Afford liquid manure to such as require more vigour, but avoid stimulating vigorous trees too much, as that will encourage wood at the

expense of the fruit stoning. Keep red spider under by syringing, and if aphides or other pests appear promptly apply an insecticide, those advertised being thoroughly efficacious and safe, provided the instructions are carefully followed.

Late Houses.—The fruits being well set, the trees will need syringing in the morning and on fine afternoons to rid them of the remains of the flowers. Commence thinning when the fruits are the size of horse beans, removing the smallest and worst placed, leaving a few more only than will be required for the crops, but regard must be had to the vigour of the trees, and their liability or otherwise to cast some of the fruit in stoning. Disbudding and laying-in the shoots should be carefully attended to, doing the first gradually, and the latter with due regard to the swelling of the shoots. A temperature of 50° at night and 55° by day artificially will be sufficient to keep the trees in steady progress, ventilating freely above that, unless it is desirable to hasten the crop, when a temperature of 55° at night and 60° to 65° may be secured, with 70° to 75° from sun heat, ventilating from 65°.

Unheated Houses or Wall Cases.—The fruits have set well, very many more than the trees can bring to a full size, and they should be thinned as soon as the best can be decided upon by their taking the lead in swelling. Overburdening the trees in the early stages of the fruit swelling prevents their making wood for another season's crop, while excessive disbudding may cause the fruits to fall, or a strong growth to be made. A moderate syringing on fine mornings will be of great assistance in ridding the trees of the remains of the blossoms, but afternoon syringings are not advisable; nor sprinklings that are likely to cause a moist atmosphere at night, as the weather is not yet to be depended upon, and a severe frost occurring while the trees or house is damp is very much more likely to prove disastrous to the crop than if the atmosphere be dry. Ventilate at 50°, not allowing an advance above 65° without full ventilation, and close at 50°, or before if there is a prospect of frost at night. If water be necessary, apply it sufficiently early in the day to allow of the surface becoming fairly dry before the house is closed.

THE BEE-KEEPER.

Young Queens.

It is a recognised fact that bee-keepers who have studied the requirements of their bees, and who endeavour to obtain as much honey as possible, have a system of rearing young queens. There is no comparison between a stock headed by a worn-out queen and a colony having a young queen reared from a good strain. In the former case it is doubtful whether a surplus will be stored. But in the latter instance a rich harvest will be obtained if ordinary care is taken and the weather is favourable.

Bearing these facts in mind, it is surprising the amount of ignorance one often finds among the rural classes in various parts of the country. During a recent visit to the New Forest, where the early spring flowers were much in advance of the midland and northern counties, we saw numerous colonies of bees, the majority of them being in straw skeps. In conversation with several bee-keepers we learnt the bees were left very much to chance, and no system of queen rearing was attempted. We found more often than otherwise that the bees were placed over the sulphur pit to obtain honey in the autumn. It, however, shows how necessary it is that bee-keepers should do all in their power to assist those who are not so favourably situated. There are probably more queenless stocks at this season than at any other time of the year. The reason is not far to seek. Owing to a variety of causes young queens may not have been reared the previous season. Some of the queens may be in their third year, and have passed through the winter safely and well; they are, however, unable to fulfil their duties in the hive. If they do not succumb, the bees will take steps to replace them by starting queen cells; at the same time some drone brood will be found in the hive. During the past week we have examined a stock in this condition. The bees only covered two frames; there were a few square inches of worker brood, and about twenty drones just sealed over. We concluded this was a certain sign that the stock would soon be queenless. They were therefore united to the next colony. The queen's wings were ragged, which is a sign of old age.

System in Rearing Queens.

The operation of rearing young queens is not nearly as formidable as a novice would imagine. There are so many ways of doing it, and if worked on the right lines there need be no difficulty in carrying it out successfully. It is too early to commence operations, but it is as well to make arrangements, so that when the time comes there will be no delay. Queens are at their best the second year. It is as well therefore to have as many at that age as possible. Thus queens hatched during the coming summer will be at their best next year.

Bearing these facts in mind, we endeavour to have as many stocks as strong as possible by the time the honey flow comes. If several queens are required, a strong stock is selected from which to obtain them, the queen being removed. The combs containing freshly laid eggs should have small holes bored through them, or be notched at the bottom. Close the division board and allow them to remain for a few days. An examination should then be made, when there will probably be from twelve to twenty queen cells formed. If by any chance there are not as many formed as will be required, insert a frame of newly laid eggs taken from another hive, and fresh queen cells will be started. Queens are hatched in sixteen days from the laying of the egg. Three or four days previous to this divide the stock into as many nuclei as are required. If other colonies have been weakened by the removal of brood and bees for strengthening other stocks for extracting purposes, the queens may be removed and a queen cell given to each colony. After the young queens have become fertilised they may be introduced to other colonies.—AN ENGLISH BEE-KEEPER.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Malope splendens (J. H.).—This is a sub-variety of *Malope trifida grandiflora*, with very fine bright flowers of crimson shade. The plant is of a sturdy, branching habit, and in good soil attains to a height of 2 to 3 feet. It is an annual, and succeeds in the open border if sown at the end of April or early in May. The plant is of easy culture in almost any ordinary garden soil, but succeeds best in a sandy one, and in a sunny situation.

Grafting Epiphyllums (M. G. R.).—Grafting is readily effected by pulling out a short branch just as growth commences in spring, making a slanting cut in the stock downwards, and then forming the Epiphyllum branch into a wedge so as to fit the cut in the stock. Insert it and secure it with one of the sharp spines of the *Pereskia* stock passed right through to hold it firmly. The graft may also be inserted on the top of the stock. No covering is necessary; the plants should be in a warm, moist atmosphere, and care must be taken to properly secure the grafts with the *Pereskia* spines.

Marechal Niel Rose Buds Dropping (Amateur).—The fact of your having been in the habit of applying manure water twice and three times a week plainly accounts for the dropping of the buds and decaying of the edges of the leaves. Although this class of Rose, when established and the roots are in a healthy condition, will derive great advantage from an occasional use of stimulants, they certainly will not bear with impunity such frequent doses as you have been in the habit of giving yours. Stimulants should only be given once a week when the plants are carrying a crop of buds, and this must vary in strength according to the age, size, and time the plants have been established. Cease the application of liquid manure for a time, remove all the unhealthy looking buds at once, and encourage the plant to make new growths by syringing the foliage once or twice a day. A good and safe stimulant for Roses is an ounce of guano dissolved in a gallon of soft water, and applied once a week when the plant is in flower.

Liquid Manure for Roses (*Idem*).—1. If your Rose trees are growing strongly, and in rich soil, it is advisable to wait until the flower buds are beginning to form before supplying liquid manure to them; but in the case of those growing in soil not often enriched with manure, a weekly supply will do good. In all cases the liquid manure should be fairly diluted with water before its application. When the buds are formed, twice a week will not be too often to apply the liquid manure.

"Blind" Apple Tree Buds (*Loughgall*).—The twigs are quite sound in the bark and woody tissues, but the greater part of the buds are "blind," brown and dead. Some of the buds have pushed growth, the inner or apical leaves being browned and distorted, and the outer or more developed ones partly blackened as by frost. On examining the buds the tissues were found in a granulated state and occupied by the mycelial hyphae of a fungus, but whether saprophytic or parasitic in nature is undeterminable in the absence of "fruits." Similar result attended the examination of the distorted leaves, there being no out-growths. The affection is solely confined to the buds and the young growths. Possibly the heavy crop last year has so impaired the tree's health as to result in imperfect bud formation, thus rendering attack by malignant organisms more disastrous. The fungoid bodies closely resemble those of brown rot fungus, *Monilia fructigena*, but we have not noticed it before on Apple tree buds. There is no trace of insects, only the branching mycelium of the fungus, which will probably yield to spraying with dilute Bordeaux mixture. Spray first before the blossoms open, then as soon as the fruit is well formed spray again, and repeat the application twice later at intervals of two weeks.

Tulips not Perfecting Their Flowers (*Charing Cross*).—The two plants arrived in good condition for examination, and appear of the variety you name—*Couleur Cardinal*. The flowers were dried up in a partially developed state, being very small, and in the condition known to growers as "deaf." This has been attributed to a sudden check when the flowers were in the bud state, such as a quickly occurring and considerable depression of temperature, but though this may be the cause in some cases, we usually find that it arises from an imperfect formation of the flower buds in the previous season, either from over-propagation or indifferent growth and maturation of the plants. There may be, and no doubt are, other causes of the "deafness," such as attacks of root mites, which impair the vitality of the bulbs at the base and pass from these to the roots, destroying them when partly developed, thus depriving the flowers of the support essential for their development. On one of the bulbs there were traces of root or bulb mite, and in both instances the roots of the plants were few and dead. This we attribute to the indifferent condition of the bulbs, as induced by the imperfect growth and maturation in the previous year.

Repotting Indian Azaleas (*Inquirer*).—The best time to repot Azaleas is directly after the flowering period is over, as it is then when both top and root growth is most active. As a rule, every third year is often enough to give larger pots. Azaleas can easily be over-potted. Supposing the pots are crowded with roots turn them out, carefully remove the drainage, and with a pointed stick lightly loosen the sides and upper surface of the ball. Shift into clean, well drained pots not more than one inch larger all round. If the roots are in bad condition through over-potting, the action of worms or over-watering which may have led to sourness of soil, reduce the balls rather freely, pricking away much of the unoccupied soil, and place in the same sized or even smaller pots than they were in previously. Use a mixture consisting of two parts good brown fibrous peat, one part of fine leaf soil, and one part of brown fibrous loam, with silver sand freely added. Pot very firmly, taking particular care to well drive the soil down the sides of the pots with a flat potting stick. Keep the plants in gentle heat of from 55° to 60°, shade from bright sunshine, and syringe frequently. Not till the young growths are well matured and the buds really set should the plants be turned out of the house, when they ought to be set on a bed of ashes in a cool position, housing again before frosts can injure them.

Mole Crickets Damaging Seedling Plants (M. C.).—These pests do considerable mischief in gardens, and happily are confined to the south of Britain, not extending to the north. The insect prefers light, sandy, or cultivated soils, especially in damp situations, and in digging its burrows it cuts the roots that it encounters, causing the plants to wither without evident cause. It eats the underground parts, whether roots or stems, of many plants in both gardens and fields, but the favourite food of the mole cricket is insects, and the creature is so voracious that when starved it devours its own limbs. The best means of riddance is to take some pieces of raw meat cut so as to resemble worms, and insert them in the soil, preferably in the burrows of the insects, and partly out of the soil, securing with a piece of bouquet wire to a small stick. The animal may thus be either dug out or pulled out of the soil, a vessel of hot water being at hand to drop those taken at the baits into. The insects are readily killed by hot water, it being a good practice to follow up the runs with the finger till the spots where the creatures rest are arrived at, which are known by the descent and smoothness of the holes, then widen these at the top and fill them to the brims with water at a temperature of 110° to 125°. In the case of plants in rows tread the ground quite firmly and smoothly so that the pathways of the insects may be readily seen. Follow the runs up and fill the holes with hot water.

Spots on Pear Leaves (*Anxious*).—The cause of the spots is the Pear gall mite (*Phytoptus pyri*) in each of which spot there is a small cavity occupied by nearly white four-legged microscopic creatures, or bluntly oval bodies—the primary eggs of the cycle—those found later not being more than “buds,” and are much larger. The spots are very numerous—indeed, run together—but each has a small opening in the under side of the leaf protected more or less by hairs. All are due to the action of the mites, which in bad cases greatly weaken the tree, causing the leaves to turn brown or black and fall prematurely. Probably the safest remedy is bisulphide of calcium made by boiling 1 lb. of flowers of sulphur and 1 lb. quicklime in a gallon of water for fifteen minutes, constantly stirring whilst it is boiling, then allowed to settle, and the clear liquid poured off for use. This placed in a stone bottle and tightly corked in a dark place will keep indefinitely. Dilute with 100 parts of water for use, or say 1 gill (quarter pint) of the liquor to 3 gallons of water, and apply with a syringe, taking care to wet the under side of the foliage, then some will enter the apertures or be held there sufficiently for destroying the mites. The bisulphide solution should be kept off paint, otherwise it will discolour it for a time. Repeat the syringing if necessary, but one application usually suffices to prevent the spread of the infection, though it will not restore destroyed tissues to health.

Pests Destroying Plants in Pots (*White Worms*).—No. 1 pest belongs to the natural order, Oligochaeta, and to the genus Enchytraeus, the species being *E. Buckholzei*, which attacks the root hairs of various plants and sets up disease. As the manure swarmed with the pests, they were thus introduced and fostered. They induce a sour condition of the soil, which quite as much as their attack contributes to the loss of roots. You use the manure and the leaf mould too raw, not reducing the former to a rotten state and the latter into the condition of mould, the processes of disintegration being effected in the soil, and in excess of water resulting in sourness. The other pest, No. 2, is the so-called “pill beetle,” and is popularly known as the Armadillo, *A. vulgaris*. It also lives on living vegetable substances as well as those in a state of decay, the freshness and openness of the material submitted to us accounting for its presence. We can simply suggest a thorough preparation of the compost materials before use. The white worms succumb, as you have found, to Fir tree oil insecticide, lime water, and Jeyes' fluid, but you say these substances injure the roots of the plants. Possibly the first and last named articles have been applied too strong, the lime water not being injurious unless used in excessive amount and to plants that require peaty soil. Woodlice should be trapped; two pieces of old board placed one upon the other with a pebble between, sprinkling a little bran on the lower one, form an excellent trap. This should be examined every morning, and the woodlice brushed into a pail of hot water.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. C. N.*)—*Iris fimbriata*. See illustration and accompanying letterpress on page 402. (*J. K.*)—The specimen is too small for positive identification, but most probably it is *Edgeworthia chrysantha*. (*R. G.*)—*Lathyrus vernus*. (*T. Y.*)—1, *Saxifraga muscosa*; 2, *Doronicum plantagineum*; 3, *Magnolia conspicua*; 4, *M. Soulangeana*; 5, *Prunus Padus*; 6, *Berberis stenophylla*. (*P. R.*)—1, *Berberis Darwini*; 2, *Osmanthus ilicifolius*; 3, dead; 4, *Pteris serrulata*; 5, *Adiantum grandiceps*; 6, specimen insufficient, send fertile frond. (*T. A. J.*)—1, *Chorozema cordatum splendens*; 2, *Anthurium Scherzerianum*; 3, an *Anthurium*, species undeterminable; 4, a Flax, probably *Linum perenne*; 5, a *Megasea*, probably *latifolia*; 6, send fresh specimen.

Covent Garden Market.—May 9th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.				
Apples, English, sieve ...	5	0 to 10	0	Lemons, case ...	4	0 to 15	0		
„ Californian, case ...	8	0	14	0	Oranges, per case ...	5	0	15	0
„ Nova Scotian, barrel ...	15	0	22	0	„ Californian, seedless ...	16	0	24	0
„ Tasmanian ...	8	0	18	0	Pears, Californian, case ...	6	0	12	0
Cobnuts per 100 lb....	80	0	90	0	Pines, St. Michael's, each ...	1	0	6	0
Grapes, black ...	5	0	10	0	Strawberries, lb. ...	3	0	6	0

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, green, doz. ...	2	6	to	3	0	Mustard and Cress, punnet	0	2	to	0	0
Asparagus, green, bundle	0	9		3	0	Onions, bag, about 1 cwt.	7	0		9	0
„ giant, bundle	15	0		20	0	„ Egyptian, cwt. ...	8	0		0	0
Beans, Broad, per flat ...	3	0		4	0	„ Spanish, case ...	10	0		12	0
„ Jersey, per lb..	1	0		0	0	Parsley, doz. bunches ...	2	0		4	0
„ Madeira, basket ...	2	6		3	6	Peas, Jersey, lb. ...	0	9		1	0
Beet, Red, doz....	0	6		0	0	„ French, lb. ...	0	7		0	0
Cabbages, per tally ...	5	0		6	0	Potatoes, cwt. ...	3	6		6	0
Carrots, doz. ...	3	0		4	0	„ new Jersey, lb. ...	0	2		0	5
„ new, bunch...	1	9		2	3	„ Teneriffe, cwt....	18	0		28	0
Cauliflowers, doz. ...	1	6		3	0	Radishes, Jersey, long, doz.	0	8		0	10
Celery, bundle ...	1	0		1	9	„ French, round, doz.	0	9		0	0
Cucumbers, doz. ...	2	0		4	0	Seakale, doz. baskets ...	4	0		7	0
Endive, doz. ...	1	6		2	0	Shallots, lb. ...	0	3		0	0
Herbs, bunch ...	0	2		0	0	Spinach, bushel ...	2	0		3	0
Leeks, bunch ...	0	8		0	0	Sprue, French, doz. ...	4	0		5	0
Lettuce, doz. ...	0	10		1	2	Tomatoes, doz. lbs....	4	6		5	6
„ Cos, doz. ...	3	0		5	0	Turnips, bunch...	3	0		4	0
Mint, green, doz. bunches	3	0		6	0	„ new ...	0	5		0	7
Mushrooms, lb....	0	8		0	10						

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums	2 0	to 3 0	Mignonette, doz. bunches	3 0	to 5 0
Asparagus, Fern, bunch...	2 0	2 6	Odontoglossums	5 0	7 6
Bouvardia, bunch	0 6	0 9	Pelargoniums, doz. bnchs	8 0	12 0
Carnations, 12 blooms ...	1 6	2 0	Roses (indoor), doz....	2 6	3 6
Cattleyas, per doz.	0 0	12 0	„ Red, doz.	2 0	4 0
Daffodils, single, doz. bnch.	2 0	6 0	„ Safrano, doz	2 0	3 0
Eucharis, doz.	3 0	4 0	„ Tea, white, doz.	2 0	3 0
Gardenias, doz.	1 6	2 6	„ Yellow, doz. (Perles)	3 0	4 0
Geranium, scarlet, doz.			„ Maréchal Niel, doz.	6 0	12 0
bnchs.	6 0	9 0	„ English (indoor):—		
Lilium Harrisii, 12 blooms	3 0	4 0	„ La France, doz. ...	3 0	6 0
„ longiflorum, 12 blooms	3 0	4 0	„ Mermets, doz	3 0	8 0
Lilac, white, bundle ...	3 0	4 0	Smilax, bunch	4 0	6 0
„ mauve, bundle	2 0	3 0	Tulips, scarlet, bunch....	0 6	0 8
Lily of the Valley, 12 bun.	6 0	18 0	„ yellow, bunch	1 0	1 6
Maidenhair Fern, doz. bnch	8 0	10 0	„ bronze, bunch	1 0	1 6
Marguerites, doz. bnchs.	3 0	4 0	Violets, Parma, bunch ...	3 0	4 0
„ Yellow, doz. bnchs.	3 0	4 0	„ English, doz.	2 0	3 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.				
Acacias, per doz. ...	12	0	to 24	0	Ficus elastica, each ...	1	6	to 7	6
Arbor Vitæ, var., doz. ...	6	0	36	0	Foliage plants, var., each ...	1	0	5	0
Arums, per doz. ...	6	0	8	0	Genistas, per doz. ...	8	0	15	0
Aspidistra, doz. ...	18	0	36	0	Geraniums, scarlet, doz....	6	0	10	0
Aspidistra, specimen ...	15	0	20	0	„ pink, doz. ...	8	0	10	0
Azaleas, various, each ...	2	6	5	0	Hyacinths, Dutch, doz. ...	10	0	18	0
Boronias, doz. ...	20	0	24	0	Hydrangeas, white, each ...	2	6	5	0
Crotons, doz. ...	18	0	30	0	„ pink, doz. ...	12	0	15	0
Cyclamen, doz. ...	6	0	8	0	Lily of Valley, per pot ...	1	0	2	0
Daffodils, pot ...	0	6	1	0	Lycopodiums, doz. ...	3	0	6	0
Dracæna, var., doz....	12	0	30	0	Marguerite Daisy, doz. ...	12	0	15	0
Dracæna viridis, doz. ...	9	0	18	0	Mignonette, doz. ...	8	0	12	0
Erica various, doz. ...	8	0	18	0	Myrtles, doz. ...	6	0	9	0
Euonymus, var., doz. ...	6	0	18	0	Palms, in var., each ...	1	0	15	0
Evergreens, var., doz. ...	4	0	18	0	„ specimens ...	21	0	63	0
Ferns, var., doz. ...	4	0	18	0	Spiræas, per doz. ...	8	0	12	
„ small, 100 ...	4	0	8	0					



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Lincoln April Fair.

“THE greatest fair in England,” says “Whitaker's Almanack;” and when we consider the fair as a whole, the time it occupies, the variety of customers which it brings together, and the quality of its wares, we think that Whitaker is justified in making the statement referred to.

The great fair takes place during the last whole week of April,

and therefore, technically speaking, began this year on April 23rd, and finished on the 28th; but though the 23rd was the official commencement, and the day on which the city authorities first allowed horses to stand for sale in the public streets, the real, and in some respects the most important business began nearly a week before. On Tuesday, the 17th, horses had arrived, and buyers had preceded them. Business soon became exceedingly brisk, for the war has created an extra demand for medium horses, which has had an influence on both the higher and lower classes of animals. We have heard (but of course it is hearsay) that the deepest depths of some of the inn yards could tales unfold as to Sunday trading; but perchance they are idle tales, and when the yard is spacious and secluded, and the straw bed thick, a gentle exercise canter is almost a work of piety as well as necessity. As many of the early buyers are continental, they at any rate would see nothing wrong in a little pleasant relaxation on Sunday afternoon. That much business was done this year on the 22nd of April we doubt, for many sellers of high-class horses had already sold out and gone home, and so few animals were present unsold that business would cease for want of material.

We have a strong exemplification of the truth of the proverb that "the early bird gets the worm" in the fact that the fair yearly commences a little earlier. Easter and Bank Holiday acted in prevention of this on the recent occasion, but as a rule the buyer who turns up an hour behind his opponent, and therefore misses the chance of valuable bargains, makes careful note of his mistake, and comes earlier next year. *Vice versa* the same occurs the year after, and so on *ad infinitum*, until we wonder how long it will be before Lincoln April Fair commences in March.

The visitors brought to Lincoln by the sheep fair on the Thursday and the beast fair on the Friday come chiefly from Lincolnshire and the neighbouring counties. It is the horse fair which brings people such long distances. This year there were buyers from North and South America, France, Germany, Italy, Belgium, and Holland. A demand for horses for continental military purposes had been anticipated, and large purchases were made by the Governments of Germany, Italy, and France. The prices given by these military authorities were, however, not so high as had been expected, and there was some disappointment, although prices were better than at previous fairs. The horses these buyers required were from 15—1 to 15—3 hands, not under five, or over ten years. Prices were from £35 to £45, with an occasional £50, whilst officers' chargers ranged as high as £60.

Of the high class horses, hunters were not so much in demand as usual, though fair prices were realised for good animals with some reputation. There was an excellent trade for harness horses, and many made high prices, Mr. W. J. Smith of Cadogan Place giving £1000 for six to Mr. Beldam of Witchford, Ely. For cobs and ponies there was also an excellent trade at good prices. Fine draught horses were very scarce and dear, and prices rose considerably during the fair, dealers buying them and reselling; some were resold several times. The following prices will give some idea of the value of the different classes:—

Matched pairs of carriage horses	..	..	£150	to	£350
High stepping brougham horses	..	..	70	to	140
do saddle horses	..	..	80	to	150
Good carriage horses	..	..	70	to	120
Troopers, from	..	..	35	to	60
Bus and van horses	..	..	30	to	55
Cab horses	..	..	20	to	35
Ponies	..	..	15	to	120
Draught horses for town work	..	..	50	to	125
Farm horses	..	..	30	to	50

The sheep fair on Thursday was the smallest on record, only 10,000 sheep being penned, as against 15,000 last year, 18,000 in 1898, and 23,000 in 1897. This great falling off this year must have been expected, for few farmers have had many Turnips left since January, and large numbers of hogs were sold to the butchers in early spring which in the ordinary course of things would have been shown at this fair. A firm of bankers offer a cup every year for

the best pen of 100 grazing he hogs. The first prize pen, belonging to Mr. Headland of Potter Hanworth, sold for 70s. each, but afterwards changed hands again at a good profit; the second prize lot, the property of Mr. Maltby of Dunston, who had previously won the cup two years running, made 72s. each, going to a grazier at first hand. In Lincolnshire yearling sheep, which in the south are spoken of as hoggets, are known as hogs, and the males and females as heders and sheders.

Prices for sheep were not much above the average of previous years, many farmers only making about the same as last year, but when the very mean and backward condition of the majority is considered the prices must be looked upon as very satisfactory. We know that many butchers have lately found their mutton cost them 9½d. per pound, and even more, and this shows how scarce are sheep with any meat on them.

Nine years ago was formed the Lincoln Longwool Sheep Breeders' Association. This society is now considered to be the leading sheep breeding society of the world, and we notice in the account of the annual meeting at Lincoln recently that no less than 60,000 lambs were officially earmarked by the society last year, being about 4000 less than during the previous year. It was, therefore, not on account of the shortage of the 1899 lamb crop that this year's sheep fair fell so far below the average in numbers.

The Lincolnshire Red Shorthorn Association held its sixth annual meeting on the Wednesday in fair week, and its annual sale of bulls on the Thursday. About 300 fine specimens of the breed were offered for sale, and almost, if not quite, all found purchasers at prices varying from 15 to 105 guineas. The improvement in the general character of the bulls shown at the sale since the association was formed is remarkable for so short a time.

The beast fair on Friday was about an average one as regards numbers and price, but below average as to quality. Good fresh bullocks were very scarce, and made up to £25 each, but many of the cattle shown were in poor condition, and these met a very slow trade. The better class beasts, which make upwards of £20 each, are chiefly bought to graze and finish on the rich salt marshes which border the Lincolnshire coast.

There is a most varied pleasure fair for sightseers, but few of the people who attend on business bend their steps in that direction when business is done. There are many objects of historical interest in Lincoln, and a few spare hours may be profitably spent in studying and pondering over these relics of bygone days.

Work on the Home Farm.

The weather has been very variable since our last, and has been favourable for farm work. Two sharp frosts did no harm except to the pasture, and a nice rain following a few dry days has done much to aid the drags and harrows in preparing the land for Swedes. Some of the stronger fields are not in a very kind condition, as they turned up very rough when ploughed over lately; the attempt at working them in February apparently did more harm than good. This once more proves how unwise it is for farmers to be too anxious to get work done when weather conditions are unfavourable; it is very seldom that there is any real saving, and more often there is a positive loss.

Wheats are looking well, and they are keeping root fairly, few complaints of wireworm being heard. The plant generally is good, and though backward we think well of the prospects of this crop.

Barleys have grown and come on wonderfully; the heat during the latter end of Easter week having given them a capital start. We have heard many remarks as to the rapidity with which Barley has grown this spring, and this should do much to make up for the late sowing. We hear one or two farmers who drilled early complain of their Barley suffering from grub, but as a rule Barleys look very well. The same may be said for Peas, and also for winter Beans, which never looked better.

Cattle are not making much progress, for there is little grass, and they are still looking thin and backward. There will not be much June beef this year.

Ewes are poor and look very ragged and badly. It is a pity that clipping time is not here, for some of them will soon have little wool left. It might pay to clip early this year if the temperature would allow, for we always notice an improvement in the ewes after they part with their wool, for this latter requires some support, and is only a burden when not needed as clothing. Lambs are doing fairly well, but are much behind their usual condition. Fat ones have never been scarcer or dearer on May 1st.

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Journal of Horticulture.

THURSDAY, MAY 17, 1900.

The Journal of Horticulture can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 12, Mitre Court Chambers, Fleet Street, London.

Late Apples.



HERE seems to be good reason for the belief that many gardens are not so well equipped as they ought to be to meet the demand for Apples in spring. In this respect we appear to have retrograded, for the older race of gardeners prided themselves on maintaining a long supply, not infrequently extending to and overlapping the new crop of the succeeding year. The extensive planting of the numerous fine and large early Apples is, I have no doubt, one great cause of this displacement, but also, I venture to think, the treatment accorded to late varieties; and perhaps, as well, the management of fruit rooms has had not a little influence in contracting the supply of late Apples. Whatever the cause, we ought to waken up and seriously face the question, for there is less reason that now, more than at any previous time, we should fail in this matter. As to amendment there is no fear. The British gardener has shown over and over again his capacity, as well as his willingness, to cope with all the changes that are constantly occurring in his profession, and in this comparatively small matter there need be no dubiety as to the result, once he has made up his mind there exists room for improvement.

To say we ought to reduce the number of varieties is merely repeating what has been many times said already. It is, however, so important that this point cannot be passed without again drawing attention to it. Particularly as regards putting a limit to early sorts, and cultivating only those that succeed best in a given garden, it is important that a change should be made. The substitution of reliable late varieties for those affords at once the means of increasing the spring supply. And we cannot be too careful in the introduction of late sorts. Any variety, however handsome in appearance, the fruit that is subject to disease or that does not crop regularly should be passed over, and the number of trees of those that are dependable correspondingly increased.

No. 2694.—VOL. CII., OLD SERIES.

In small gardens this system of rigid selection should certainly be enforced, though a more elastic method may prevail where increased space permits the inclusion of a great number of sorts. But with a well selected stock of varieties it is neither impossible nor improbable that imperfect results may follow, and this because late varieties require special care in cultivation.

The easy method of being content with a full crop one year while the tree recuperates the next is a system unworthy of present-day achievements. Apart, therefore, from uncontrollable difficulties of weather, we ought to manage the trees in a manner calculated to secure an annual crop with unfailing regularity. For one thing, the peculiarities of each variety must be studied. Tower of Glamis, for instance, fruits more regularly and produces a crop of better quality when not too severely pruned. Alfriston, on the other hand, requires close pruning. But these are merely details that may be picked up by anyone who attends the trees. In addition, there are a few general points of management which must be carried out in order to succeed, and though they appear sufficiently simple once a grasp has been effected of the principles on which they rest, I am afraid they are too often overlooked altogether.

There is first of all the primary one of securing uninterrupted light to every leaf, as well as plenty of space for its development; and with that, every shoot and branch so adjusted as to secure an absolutely clear space free from the obtrusion of any other. Put in another way, the number of branches and shoots must be limited, not only to those it is possible to allow air and light to reach on every side, but to what the judgment and the experience of the cultivator finds does not strain the powers of the tree to preserve in fruitful health. This necessarily reduces the amount of foliage, but it is wise in addition to examine spurs and to thin them also, where necessary, to only the strongest, and these further limited to the needful number. By these means, as far as it lies within human intervention, we have a tree equipped and in a condition to respond to its natural proclivities to fruit bearing; and if fruit does not follow, apart from the disturbing element of weather, we must look for the reason either in the variety being naturally shy to fruit, when it must be displaced, or to the roots requiring attention, when they must be pruned, raised, or otherwise treated as may appear necessary. It is a fact patent to anyone in the habit of visiting gardens in different parts of the country, that Apple trees as a rule are much too closely, or thickly, furnished with branches, and also with spurs. Once the cultivator is convinced of this, he is fortunately not confined to one particular season of the year to initiate amendments. Spurs may be regulated at almost any season, and immediately growth is in progress in June branches and shoots may be excised without any risk of endangering the health of the tree.

So far we have only provided conditions the most proper to produce fine fruit, and plenty of it, though those who have not studied the question thoroughly may demur as to the matter of quantity. Now the equally important management of the crop while on the tree remains to be touched on. First of all I may say that varieties must be treated according to individual idiosyncracies, some requiring to be thinned more severely than others; that is to say, one sort fails to carry a crop so heavily as another, but that point I do not here insist on so much as the necessity of thinning the fruit of all late varieties to what many people might be constrained to designate a small crop, but which one's ripened judgment approves as amply sufficient for the tree to bring to maturity—not, be it understood, a few of the fruits, but the whole. Taking an average of years I have no doubt whatever that in bulk of fruit the severely thinned trees exceed those unthinned, while as to quality in any year the examples surpass the latter.

There are two outstanding reasons why late varieties should be lightly cropped. One, that the fruit is better grown, fully matured, and consequently keeps better and longer. The other, that the trees assume a habit of bearing a crop year after year, which in itself is infinitely more to be desired than a superabundant supply at irregular

intervals. There is no method of securing these two desirable results other than by severe thinning. But still that is not everything, for unless the fruit is allowed to remain long enough on the tree to become matured, the value of late Apples is greatly lessened. Last autumn, for instance, towards the end of October we experienced a serious gale of rain and wind which brought not a few late Apples to the ground. I rather regretted the loss of much of the fruit which was large and good in quality, so, as it was fully grown, I stored after drying all the late ones. These kept wonderfully well, but for some time much of it has shrivelled, just as late fruit does which has been stored too soon. That left ten days to three weeks longer on the trees has not, however, shrivelled at all, and in colouring the difference is markedly in favour of that which hung the longest.

I am sometimes met by what seems an unanswerable argument when advising Apple thinning—the time it swallows up. That I can assure everyone is a bugbear. A properly managed tree does not require so very much thinning, and it is marvellous how much can be done by nimble fingers and sharp eyes in a few hours. And ultimately the labour is well saved, when nothing but fruit of good quality remains to be gathered for storing. System in this as in other garden management, though apparently laborious, tends to an essential saving in work.—B.

Some of the Uses of Lime.

LIME in a garden soil favours the decomposition of the organic matter which has been added by the litter of stable manure, or by the refuse of crops dug into the earth. The action of lime on the organic matter is to produce carbonic acid; this chemical element combines with the mineral ingredients of the soil in such a way as to render the natural plant food easy of assimilation. Lime also plays an important part in changing the ammonia of the soil into nitric acid, or, in other words, placing at the disposal of the growing plants the nitrogen which has been previously stored up in a non-usable form.

There are certain garden plants belonging to the Leguminous family, such as Broad Beans, Peas, Scarlet Runners, and French Beans, which draw their nitrogenous food very largely from the atmosphere. But these plants are unable to make a satisfactory growth if the soil is overcharged with acidity. Hence we sometimes find in very old kitchen garden soils that Beans and Peas will make plenty of haulm but produce few pods and little corn. It seems that the minute organisms which dwell in the nodules or small tubercles that are formed on the roots of legumes cannot thrive if the soil is charged with humic acid. By the application of lime this acid is neutralised, and the Beans and Peas will grow more readily and yield more corn, not only because soluble nitrogen has been assimilated, but from the fact that the lime acts upon the potash compounds in the soil in such a way that they are set free for the use of the legumes and they become carriers of nitric acid.

Of course excessive amounts of lime might prove injurious to some garden plants, but this can easily be guarded against, and the amount required by different soils be determined by a few trials. Old lime and mortar rubbish are especially suitable for garden purposes, as this material greatly facilitates the formation of nitrates in the soil, and helps in its mechanical disintegration—a great boon in heavy land.

Thus lime applied to stiff clays causes them to become more friable, more permeable to the air, easier of working, and better capable of supplying water to the growing plants as needed. Sandy soils, on the other hand, are rendered by it more compact and more retentive of water and manurial substances. On very dry sandy soils smaller applications of lime must be made than upon moist soils, and the use of large quantities of lime upon such soils in single applications is not advisable. Also we have to remember that lime, without manure, will soon make a garden poor, the reason for which is not far to seek if these facts are considered.—J. J. WILLIS, *Harpenden*.

**Odontoglossum crispum The Earl.**

ON page 367 of our issue of May 3rd we gave a representation of *Odontoglossum crispum* Victoria Regina, from Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffs, and we now present O. c. The Earl (fig. 110) from the same source. This variety was shown at the Drill Hall on April 24th, and was recommended for a first-class certificate by the Orchid Committee of the Royal Horticultural Society. It is one of the handsomest of the showy section of crispums that has been exhibited, and was greatly admired by everyone present at the exhibition on the date named. The ground colour is pure white, this being almost obscured on the sepals by brown; the petals have large blotches of similar colour.

Odontoglossum crispum aureum rosefieldiense.

No two illustrations than that of O. crispum aureum rosefieldiense (fig. 111), and O. c. The Earl (fig. 110), could better illustrate the varying characters of form and colour in this popular Orchid. Mr. de Barri Crawshay, Rosefield, Sevenoaks, is to be congratulated once again on having brought forward one of the most refined varieties of O. crispum that has ever been shown. The Orchid Committee at the Drill Hall on May 8th recommended a first-class certificate, and the honour has rarely been better deserved. In shape the flower is practically perfect, as also is it in substance. It is rather small, but the excellent culture to which the Rosefield Orchids are subjected will probably make a difference in this direction in the course of a year or two. The prevailing colour is soft canary yellow, there only being a little white at the base of the petals.

Vanda teres.

This Vanda is very beautiful when grown under proper conditions, but old leggy plants 6 feet or 8 feet high, with pale washed-out looking flowers, are just the reverse. In most collections where it is really well done a house or compartment is devoted to it, or at least any other species therein grown are made to conform to its treatment.

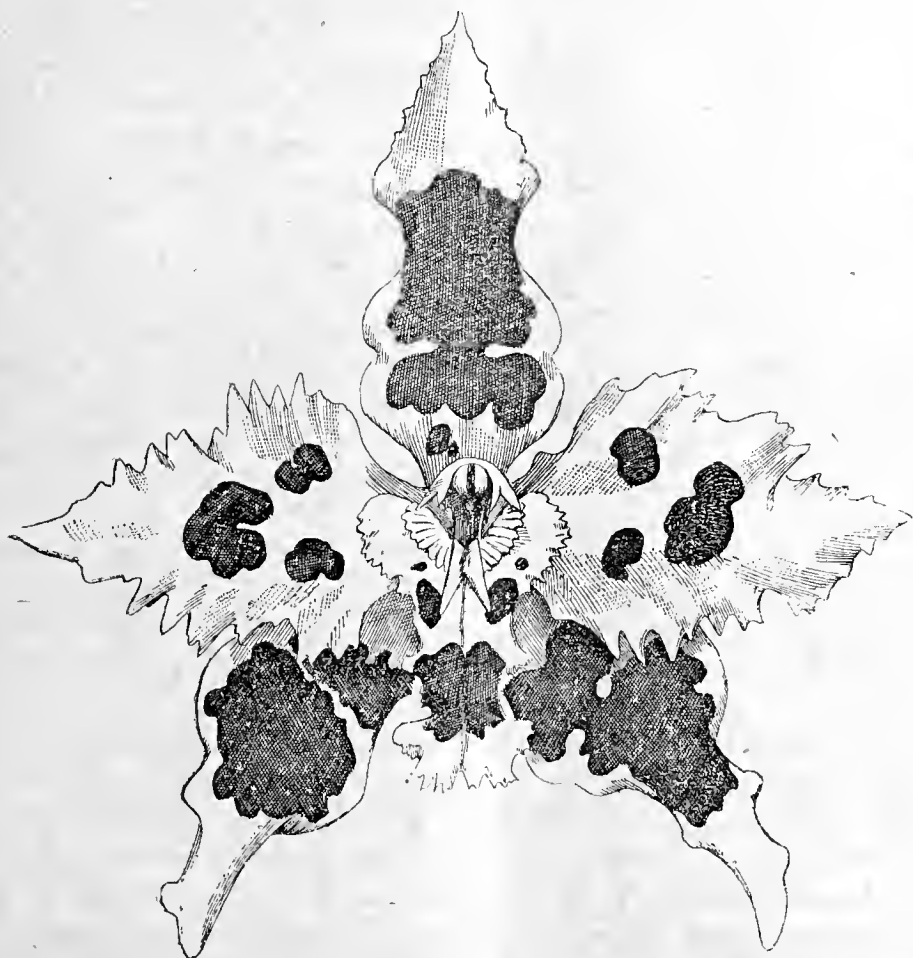


FIG. 110.—ODONTOGLOSSUM CRISPUM THE EARL.

The plants are frequently cut down and re-rooted, so that instead of the upper tier of roots rambling about in an atmosphere more or less unsuitable to them, they have the choice of compost or air.

But there are, of course, many growers with a representative collection who do not wish to grow a large number of any individual

kind, and the cutting down system is not so suitable for them; but a pole or trellised block placed in the centre of a pot or basket and covered with moss strikes a happy medium between the two systems, and is often successful. The roots have the chance of entering the moss and thus strengthening the growth. Always choose the warmest house at command for it, and there is perhaps no other Vanda that requires so much sun.

Cattleya Lawrenceana.

There are few more showy or beautiful Cattleyas than this, its fine rose and crimson-purple blossoms, so freely produced, making the plant a favourite everywhere. Fortunately it is reasonable in price; it is also of simple culture, provided the atmospheric conditions of the house are right. It likes far more sunlight than the majority of Cattleyas, and also if convenient a little more heat, though if this is not easily arranged for it gets along fairly well with other kinds. No one need fear to buy it, as it is bound to please them when it flowers.

Feeding Orchids.

Probably there are many cases where a little manuring of Orchids, even of an epiphytal character may do good, but there are many others where it certainly does harm eventually, though for a time the plants appear to be luxuriating in fine foliage and handsome

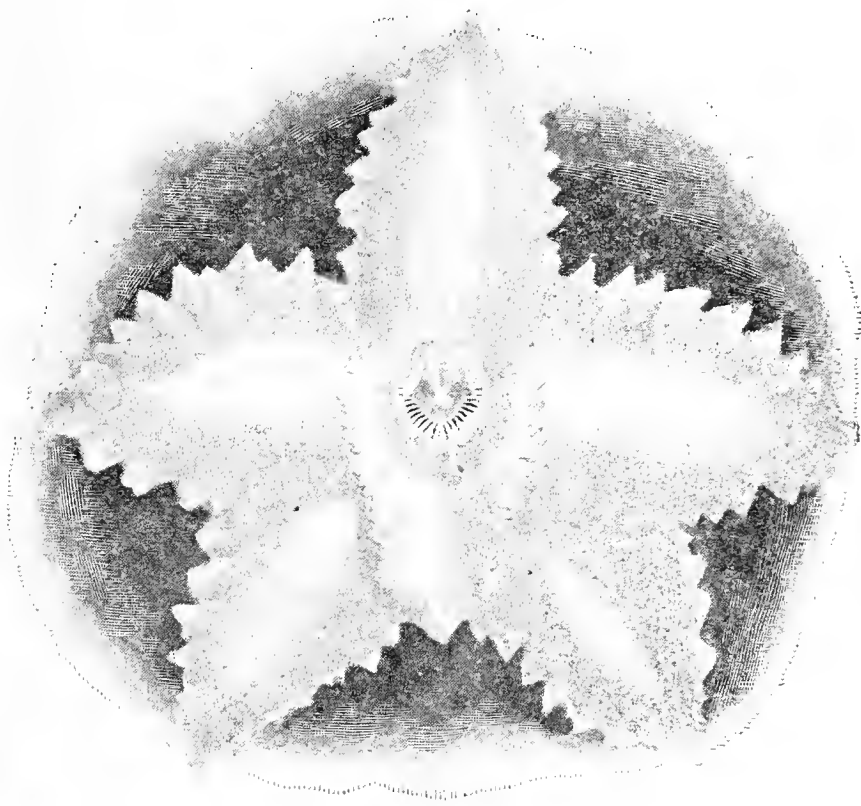


FIG. 111.—ODONTOGLOSSUM CRISPUM AUREUM ROSEFIELDIENSE.

flowers. Such a case came under my notice recently, when some fine old clumps of *Dendrobium nobile* were being pulled apart for propagating purposes. Although exceptionally good growth had been made, the roots had not that hard appearance which denotes health and ability to stand a check from disturbance, and the plants are now breaking very weakly.

Instead of giving new material these plants had been treated to occasional doses of weak soot and guano water, and it has not served its purpose. Had the plants been repotted a couple of years ago all would now have been well, and much of the new compost would have adhered to the roots when these were moved, serving to re-establish them in the new quarters. As it is the old peat was tainted and black looking, and it would not have been good policy to have placed it in the new pots.

Feeding in my opinion, and according to my experience, must never be made to take the place of new material. If it does, however good the result may be for a time, the plants will be worse for it when repotting again becomes necessary. There are many instances where feeding judiciously carried out is productive of much good. Some of the very finest *Miltonia vexillaria* I have ever seen were always given a weak dose of liquid made from soot and cow manure when the spikes were expected, unless freshly potted, and here the results fully justified the practice.

Had it been applied every season instead of giving new compost, there would have been a different tale to tell no doubt. So far I have not mentioned terrestrial species such as *Cypripedium* and others, or epiphytes treated as terrestrial like *Thunias* and some *Calanthes*. Here there is no doubt that a little feeding has in many cases helped, by causing the plants to produce flowers of higher quality without endangering the roots. But vigorous leafage is not always a sign of increased health.—H. R. R.

A Chat About Fern Raising.

THE propagation of Ferns by means of seeds or spores has, in great commercial establishments, now reached the dimensions of an important industry. Millions are raised and sold annually in tiny pots, in addition to the vast numbers which are potted and disposed of in those popular-sized pots—viz., 5 and 6-inch. The trade has, indeed, been entirely revolutionised since the old days, when the secret of Fern raising was known only to the few, and when the majority depended upon root division as a means of increasing their stocks.

This continual process of raising seedlings has also had the effect of bringing hosts of new varieties to light, for when several species and varieties are grown in the same house cross-fertilisation is frequently the result, and even when seed is saved from plants growing in a house devoted entirely to one variety, we invariably find a few of the seedlings distinct from the type, though not always superior. Varied, novel, and beautiful as are the many species and varieties of Ferns now grown, there will, I think, in the future be still more diversity among them—a diversity which will be bewitching as well as interesting. There seems, in fact, to be no limit in regard to the good things to be expected in the days to come, and those who practise systematic cross-fertilisation will perhaps be able to give us a new race, with bold broad fronds, as well as others with serrulated and crested ones of an entirely new type. That grand variety *Pteris Drinkwateri*, which is a marked improvement on *P. major*, seems to have taken us a long way upon the road by which we may hope to secure varieties having fronds as bold as *Kentias*, and in *Osmunda japonica corymbifera* we have a splendid Fern for decorative purposes, as the formation of the fronds is distinct and striking, and their rosy pink colour quite novel.

In private establishments small Ferns are in great demand, for the modern decorator finds innumerable ways in which to employ them to advantage, but I fear that in only very few instances is the supply equal to the demand, for it is an undoubted fact that private gardeners—as a rule—have not kept pace with the times in regard to Fern raising, as they usually rely upon chance seedlings which come up in the fernery or on the walls of other houses, for increasing their stock. This is, however, not a matter for surprise, as private gardeners labour under difficulties which do not exist in large commercial establishments, where specialists are engaged for such work, while the gardener with his multitudinous duties seldom gets the opportunity to study and work out the really simple details which are essential to success. For these reasons I trust a few remarks on the subject will be helpful to any who require such information.

The most important detail in connection with the matter is, undoubtedly, to secure fronds loaded with spores just in the "nick" of time. Many have failed in raising Ferns from promising looking fronds solely because they were gathered too late; the spores had dropped, only the cases or sori remained. The selected fronds should be examined frequently, and when the cases are of a rich brown colour the fronds should be cut, enclosed in paper bags, and hung in a dry room or a sunny position under glass. If the fronds are not gathered till the sori is dark in colour—almost black—the work has been too long delayed and the spores have vanished. A little close observation and a few trials should, however, soon enable anyone to determine the exact stage at which to gather the fronds. After they have been hung for a week the spores are ready for sowing. Some will have dropped into the bag, but in order to secure as many as possible I lay the fronds on a stiff sheet of white paper, and scrape off the brown substance with a knife.

Prepare a compost formed of equal parts of well decayed turfy loam and peat, add to it a sixth of sharp sand, and thoroughly burn the whole over a slow fire till it is quite black. This burning of the soil prevents the growth of moss, which is so troublesome in Fern raising when unburned soil is used. Sift the compost through a quarter-inch riddle, drain a number of 6-inch pots to a depth of 3 inches with ashes or finely broken potsherds, cover this with some of the soil siftings, and finish off with fine soil pressed moderately firm; make it level on the surface, which should be half an inch from the top of the pot. Water thoroughly through a fine rose, then scatter the spores thinly upon the surface; as these are very minute a very small pinch will suffice for each pot; lay this on a small sheet of white paper, and scatter it evenly over the soil.

After sowing place the pots in saucers of water, cover them with a sheet of glass, and stand them in a close frame in a propagating house. The saucers should be kept constantly filled with water, to avoid overhead watering, and until the spores germinate keep the frame constantly shaded. After that stage has been reached, remove the shading early in the evening and replace it before the sun shines upon the frame. As growth progresses admit a little air, and as soon

as the seedlings are large enough to handle prick them out in shallow boxes filled with burnt soil. When doing this do not attempt to single them out, but lift little tufts with the point of a penknife and set them an inch apart. Return the boxes to a propagating frame, water through a fine rose, sprinkle lightly each day, and shade as required. When the "youngsters" are large enough to handle conveniently divide the clumps, and again prick out in boxes. Two or three may be left in a clump, to form bushy little pot plants, or they may be pricked out singly. The next shift should be into very small pots; shallow Fern pots are especially made for the purpose, as these are of convenient size for dropping into china and other pretty ornaments, in which "baby" Ferns are now so often placed.

Those who require plants somewhat larger can transfer them from these small pots into 3-inch ones, in which size they are extremely useful to gardeners for decorative purposes. The pretty Edwardian ware, which is made in various sizes and designs, supplies some of the most suitable receptacles of which I know for accommodating Ferns. *Adiantum*, *Pteris*, *Phlebodium*, *Cyrtomium*, *Lygodium*, are all popular Ferns, which may be easily raised from spores.

The *Asplenium*s are quite as easily increased by inserting the small bulbils, which form on the upper parts of the fronds, in burnt soil. They grow very slowly, but with proper treatment 95 per cent. of those inserted will grow. The best time for sowing is from January to the end of June, as those sown at the latter time get well established before the dark days of winter come. Success may, however, be secured by sowing at any season of the year, though in autumn the progress made is very slow. Throughout the summer months Fern houses ought to be kept close, very moist, and the young plants sprinkled lightly once or twice daily during bright weather. Shade should, of course, also be afforded. During autumn and winter do not sprinkle, but keep the atmosphere moist by repeated dampings; avoid doing this late in the day, especially in the management of plants in old houses, or moisture will settle upon the fronds at night and bring brown spots and stripes in them. A temperature of from 60° to 65° during winter is a suitable one for young seedlings.

At all seasons of the year when a stock of young plants is ready for use they ought to be removed to a cooler structure for a couple of weeks to harden the fronds; they will then last in good condition for a long time.—H. D.

Ribes sanguineum.

THE flowering Currant is an old and universal favourite in most parts of the country, and deservedly so, as it is easily accommodated, and has a good effect when in flower. The typical plant is a native of North America, and has pendulous racemes of flowers of a pale red colour, which are not nearly so effective as some of the forms which have been raised from it. These vary in colour from nearly pure white to a deep crimson, and form some of the most attractive of outdoor plants when in flower. A few of the best are *albidum*, which has long racemes of nearly white flowers tinged with pale rose, which, however, does not detract from its beauty; *carneum*, one of the best, with long racemes of a deep flesh colour; *Davidiana*, a form of continental origin, which has flowers of a deep rosy pink, and is very free flowering; *atrosanguineum*, with flowers of a deep purplish crimson hue, and which is the best to have where only one is grown; and *atrorubens*, in which the racemes are shorter, and the plant rather dwarfer and more spreading; the colour is deep bright crimson.

There are several other varieties, but those named above are the best for general purposes, the others not being very distinct, with the exception of *flore-pleno*, which has double flowers of a deep red colour. All these are easily raised from cuttings of the young wood taken in winter, and put in the open ground; *albidum* and the double one should be kept in stock, as they are both apt to die off suddenly from some cause or other, the plants often seeming in good health in the autumn, but failing to start the following spring. Cuttings, however, are easily rooted, so that it is not difficult to have sufficient plants to make good any losses.

Generally speaking no pruning is required, but occasionally a plant becomes ragged or in bad health, and then a cutting back after flowering induces young and vigorous growth. Thinning of the branches is required at times, where a plant has become too thick, and the shoots crowded together. None of these plants seem to be particular as to soil, but they all repay any attention bestowed upon them in the way of feeding and watering.—C.



Rose Show Fixtures in 1900.

- June 13th (Wednesday).—York.†
 „ 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
 „ 28th (Thursday).—Canterbury and Colchester.
 „ 30th (Saturday).—Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
 „ 4th (Wednesday).—Croydon, Farningham, Hereford, and Reigate.
 „ 5th (Thursday).—Bath, Norwich, and Sutton.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham.
 „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
 „ 14th (Saturday).—Manchester, and New Brighton.
 „ 18th (Wednesday).—Cardiff.*
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne.†
 „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Seasonable Topics.

THE few days of sunshine recently have caused the Rose trees to push their growth buds most rapidly, but with nightly frosts of more or less severity one is anxious about the tender shoots becoming crippled in their infancy. For this reason it is unwise to be in too great a hurry to remove any; rather leave all for a time, so that we may make a good selection from the fittest to provide the blooms. The shoots do not draw much from the tree until they have attained to a considerable length, so that no harm in that way is done by leaving them at present.

Timely attention should be given to insect pests. The maggots and aphides come in most seasons. In the former case hand picking is the only remedy. A curl in the leaf, or the point of a young shoot with its tiny leaves clinging together as it were, is a certain indication of its presence. These leaves must be carefully unfolded, and the enemy captured. In the case of green fly, syringing is the best remedy. We like the insecticide known as "Abol," a preparation recommended for Hops. This is easily applied, and not the least of its merits is that it readily mixes with water, so that there is no trouble in boiling. What is most important is that aphides should not be allowed to get the upper hand. These tiny insects become so numerous as to suck all the virtue from the growth, leaving none to perfect the blossoms.

The Value of Soil Loosening.

Stirring the soil about the plants is a constant item of culture. This keeps down weeds, makes the beds tidy, besides letting air into the earth. The strawy portion of manure put on for winter protection is cleared; the other becomes mixed with the earth by hoeing. In the case of newly planted Roses watering is thus early necessary, at least on light soil, and we also water established trees with liquid manure. Roses out of doors cannot be overgrown. They seem to take any amount of feeding and moisture. The blooms of some sorts come quartered and ugly in shape, perhaps, when the growth is vigorous; but we would rather counteract this habit in allowing an abundance of flowering shoots on a tree than by starving the same at the roots.

That very strong growing variety *Her Majesty* is an instance of this. It is apt to produce coarse blooms. It has also a trait in producing few shoots to a plant. We were advised to prune early—

in December—and this practice certainly has made the plant bushier in growth. That is to say, the lower as well as the upper "eyes" are starting into life.

A Trio of Beauties.

What a splendid Rose for pot culture *La France* is. Seldom do we get it to come into its best form in the open. The blooms are so easily spoiled by moisture, but under glass every bud opens perfectly, and the shape as well as colour are so taking. It grows equally well budded or grafted on a stock as on its own roots, and roots easily. The half-ripened stems that have produced blooms give plenty of material at this time to propagate. These should be cut into lengths of about 6 inches, placed round the edge of pots filled with light sandy earth, and stood in a closed frame within a cool greenhouse. Climbing *Niphetos* is a Rose which should not be neglected as a climber under glass. It grows freely and is a profuse bloomer. We recently noted a fine plant of Climbing *Devoniensis* in a conservatory bearing hundreds of flowers. This old variety is somewhat left behind by newer rivals; few, however, can compete with it when seen covering a space of at least 100 square feet. Loose training and little pruning appear to suit it, as long branches were hanging in full flower some distance from the roof. The tree was growing in a cosy end of a large structure where it is not subject to cold draughts, which are so detrimental to Roses under glass.—H. S.

Thinning Shoots.

Now that shoots are pushing freely on bushes, standards, and climbers, there will inevitably be growths that are of a superfluous character which require to be rubbed out. This may be done with much benefit to the plants, as the removal of those which are useless tends to improve the shape of the bush or tree, and the plant's vigour is directed to the development of growing wood or flowering shoot. An important advantage also is the freer admission of light and air, of which Roses appreciate an abundance. These conditions enable the lesser shoots and all the leaves to develop strongly and build up tissue which proves less liable to attacks from insect pests. In regard, however, to disbudding or the removal of weak shoots, it is apparent that no set rule can be laid down as to the course to pursue. The main principle may be grasped, which is that weak shoots must not be allowed to crowd the best and most promising, and this may usually be effected by the entire removal of shoots here and there.

The Removal of Suckers.

Suckers must be regarded as superfluous growths springing up out of place and abstracting from the soil food and moisture, and also tending to obstruct the light. If removed early the process is far easier than when they are allowed to remain gathering strength. The suckers, too, may prove detrimental in weakening the vigour of the roots. This will undoubtedly be the case with suckers from strong-rooting stocks upon which the Roses are worked, as, for instance, *Briars*. These are readily recognised, and should be removed cleanly, if possible, from the roots close to their origin. Own-root Roses may, and do, develop suckers which are found some distance from the plants in many cases. Allowing them to remain will eventually prove a source of annoyance and detract from the order and neatness of a small Rose bed or a large Rose garden. The tendency to produce suckers must be reduced as far as possible by their careful removal.

Hoeing and Feeding.

All beds, borders, and plantations of Roses may have the Dutch hoe run over them frequently now in order to cut down seedling and other weeds, and as a means of cultivating the soil, favouring clean and healthy growth, as well as promoting vigour. After these important and highly beneficial operations the next step is to apply a mulching. This may consist of horse droppings, half decomposed, and saturated with liquid manure. Spread it over the roots about a inch thick when the buds have formed and are swelling. The fertilising matter contained in the manure will, during rain, be gradually washed down to the roots, imparting vigour to the growth and improving the blooms in size and depth of colour. In the absence of rain artificial waterings and the application of liquid manure act equally well, if not better, in conveying due supplies of stimulants to the roots.

Soot is a capital manure for Roses, and is best applied in a liquid form. Mix a peck of soot into a paste with a little water, and then place in a bag, which tie up and sink in a tub of water holding 25 to 30 gallons. After soaking well for a few days throw in a shovelful of lime, mix, and let it stand until the liquid, instead of having a thick inky appearance, is clarified like wine. Apply this to the Roses when the soil is moist. It will add a richer and deeper tint of green to the foliage, and assist in making the leaves proof against the numerous insects which are ready to attack, especially when the soil becomes exhausted of moisture. The flowers in consequence have more substance in the petals, as well as richer and more velvety hues.

Generous living and uniform moisture will do more in maintaining the plants clean and free from insects than anything else.

In good rich soil, which is kept moist by a light mulching of manure, recently planted Roses ought not to be stimulated too much the first season with strong manures. Growth of a medium character has a better chance of becoming well and thoroughly ripened than abnormally strong shoots which might be produced, hence the latter should not be encouraged on dwarfs and standards, but may be countenanced on wall Roses, which depend largely on strong shoots for furnishing the space.—SWEET BRIER.

Pot Roses.

Roses of the Hybrid Perpetual and Tea section are very useful for growing in pots to produce flowers early in the season under glass. The plants employed for this purpose, however, require to be specially prepared during the previous summer and autumn. The present time is very suitable to obtain well established healthy plants in 5-inch or even 7-inch pots, and grow them under favourable conditions in 8 or 9-inch pots for early blooming. Good specimens may be secured from any of the leading Rose nurserymen, the plants being worked on the Manetti stock. If well rooted plants are obtained they may have a shift at once into a larger pot. The pots must be quite clean inside, and be carefully drained with a small quantity of potsherds arranged round a large central crock over the hole in the bottom. On this drainage place a layer of clean fibre—that is, fibre with all the loose soil shaken out to prevent the soil choking the drainage.

Composts and Potting.

Good, rich, substantial compost is important, and if the top spit can be obtained from a clay soil pasture, stacking it grass side downwards for a period of three months, it should be in prime condition for the potting material. Chop it down into small pieces, adding about a sixth part of leaf soil and a fourth part of manure all thoroughly intermixed, and to each barrowload an 8-inch pot of crushed or dissolved bone manure, and a liberal admixture of sand will much improve it. The leaf soil should be of a sweet character, and the manure well decomposed.

The plant must be moist at the time of potting, so that it is not necessary to water the soil immediately after. On turning the plants out of pots remove the loose soil, which may come away easily from the ball, also picking out the crocks. Place the ball in the pot so that the surface will be just below the rim when the soil is filled in and a little placed on the top. As the soil is introduced make it firm. The new compost must be as firm as the old ball. With the compost moist as well as the plants no water should be necessary for a day or two; instead of applying it dew the plants with a syringe. Keep them on a cool base in a frame or in an airy cool greenhouse, the Hybrid Perpetuals being placed outdoors in June, plunging the pot in ashes to the rim. Attend strictly to the supply of water, never allowing the soil to become dust dry.

Destroying Mildew.

If mildew should attack any of the young shoots soapy water mixed with tobacco liquid will destroy it, also green fly. The pest known as orange fungus is a troublesome foe. As much of the diseased parts as possible should be cut out, and then treat the remainder to a dusting of flowers of sulphur, which also destroys mildew.

Housing.

About the end of September if the season should be wet remove the plants into a cool, airy house, but where this is not practicable an open shed is quite sufficient protection. Plants intended for very early forcing may be pruned as soon as the leaves fall, doing this when the soil is comparatively dry. These may be introduced into a structure kept steadily at a temperature of 45°, fairly close to the glass, and when leaves have formed increase to 55°. Early blooms are never so good as those developed under the influence of longer days. Disbud or thin out crowded growths. When flower buds have been formed supplies of weak liquid manure may be given. That made from cow manure and allowed to become clear is enriching. Slight applications of guano spread on the surface of the soil and washed in also promote healthy growth, but care must be taken not to apply it of more than ordinary strength. Weak and often is a safe rule with all manurial applications, given in the form of liquid or as dustings of artificial manure.

Good Varieties.

Some of the best Tea Roses for pot culture consist of Belle Lyonaisse, Cheshunt Hybrid, Gloire de Dijon, Madame Falcot, Safrano, and Niphetos. Among the Hybrid Perpetuals there are

numbers of varieties suitable. A few desirable are A. Colomb, Bessie Johnson, Duke of Edinburgh, Général Jacqueminot, John Hopper, Jules Margottin, Madame Victor Verdier, and Star of Waltham.—H. T.

Rose Pests.

THE growth of Roses under glass is now free and vigorous, and well-established plants will be flowering abundantly, especially the climbing varieties planted out in conveniently light positions. Considerable trouble has to be taken to maintain the growth clean and free from aphid, red spider, and mildew. Aphid or green fly is sure to attack the points of the shoots, and if the pests are allowed to remain a check may be given the plants, for the insects will increase rapidly, invading the whole tree, and cause endless trouble in destroying them, besides covering the foliage with sticky secretions. Syringing the growth frequently is a good method of preventing them making their first attacks, if not of destroying them. If, however, instead of syringing with clear water a rather weak insecticide is employed, the increase of green fly must be considerably checked. If measures are taken sufficiently early to render it difficult for insects to establish themselves, there will be less trouble afterwards. The aphid feeds on the young growth, sucking out the sap.

A softsoap and sulphur emulsion, with or without petroleum added, forms an excellent solution. The way to make the solution is to boil 1 lb. of soap to a gallon of water, adding half a pint of petroleum and 4 ozs. of flowers of sulphur, first mixing the latter into a paste. Thoroughly stir and boil again. This may be placed in a bottle when cold, and half a pint of it added to 2 gallons of water at a temperature of 70°. Constantly stir the mixture when using, so as to prevent the oil settling on the top.

The above insecticide will prove inimical to mildew on Rose growths, but it may be necessary to add a little more sulphur, in order that when the solution is syringed upon the leaves a deposit is left which will ultimately destroy the fungus. Spraying on the solution is probably better than syringing, as it can be done much finer, and is more economical and effective.

Red spider is another insect which attacks Roses under glass, but it should, and may be, of rare occurrence, as it only attacks trees which are growing in a dry atmosphere, or established in a poor border which has been allowed to become deficient in moisture. If the atmosphere of the structure is kept moist by damping the floors, walls, and borders, the roots at the same time having substantial moist soil, a slight attack of red spider may soon be cured. If sulphur is mixed into a paste and spread on the hot-water pipes, which should not be kept too hot, fumes will be given off which destroy red spider. The growths ought also to be syringed with the sulphur and soap remedy.

Green fly and mildew also attack Roses outdoors. If any wall Roses are growing in a dry position, mildew will almost certainly attack them. Bush plants and standards are subject to it in poor exhausted soil. One of the first means to be adopted in fortifying Roses against mildew is to moisten and enrich the soil. Many specimens of wall and trellis Roses are undoubtedly ill treated in the supply of moisture for the roots, hence their unsatisfactory condition in flowering, and subsequent growth made for future blooming. Well moisten the ground with a copious supply of clear water, loosening the surface as far as the roots are likely to extend, so that the water may pass direct to them; follow this by a free supply of liquid stimulant, and a top-dressing of manure to retain the moisture thus applied. Syringe the stems and growths freely and vigorously morning and afternoon, the insecticide being applied in the evening, both for outside and inside plants.

Another insect which attacks indifferently cultivated and neglected specimens outdoors is a white or yellowish fly, rather larger than the green fly. This does much damage to the foliage, chiefly in eating the under or lower cuticle of the leaves, giving them an extremely unhealthy and spotted appearance. More liberal watering, syringing, and the application of an insecticide will assist in exterminating it, but to absolutely prevent the recurrence of this insect another season there must be increased attention given to the supply of soil moisture.

The Rose maggot is a grub of an injurious character, often destroying the tips or points of valuable shoots, as it feeds on the youngest and tenderest leaves, shoots, and flower buds. No insecticide is a remedy for this grub. It should be sought for early. The best indication of its presence is the rolled up leaves. Press these between the finger and thumb and the grub will be killed. If attention is given early, so as to find the first marauders, further mischief may possibly be averted. When the maggots emerge from their hiding places, and are not feeding on growth, they can often be seen suspended by silken threads. By persistently hunting down the maggots they will gradually lessen in number and finally disappear in succeeding seasons. Thrips only attack Roses in dry seasons. Brown scale is a troublesome enemy on the young growth. It is chiefly destroyed in winter while growth is dormant.—ROSARIAN.

NOTES & NOTICES

Recent Weather in London.—The weather in London has, of late, been most unpleasant. There has not been any appreciable amount of rain since last Saturday, but high north-easterly winds have prevailed with very low night temperatures. These cannot be other than prejudicial to the present wealth of blossom, and everyone is looking forward to a return of more genial conditions. The sun has shone brightly on each day. Wednesday opened clear and cold.

Large Seakale.—I have forwarded to you examples of remarkably fine Seakale, kindly sent by Mr. H. T. Martin, gardener to Lord Leigh, Stoneleigh Abbey, Kenilworth, to the recently held fortnightly meeting of the Birmingham Gardeners' Association. They form a portion of the thirteen heads weighing collectively 11 lbs. In his note Mr. Martin stated that it is the produce from one year old sets, and out from the open ground, unforced. [The produce was admirable in all respects, and worthy of the reputation Mr. Martin has already made for himself as a vegetable grower.]

Royal Horticultural Society.—The thirteenth great flower show of this society, held annually in the Inner Temple Gardens (Thames Embankment), will open on Wednesday next at 12.30. Judging from the large number of entries received, the show promises to be quite up to its usual standard of excellence. The following well-known amateurs are among the names of intending exhibitors:—Duke of Northumberland, Nepenthes; Lord Gerrard, Carnations; Lord Wantage, K.C.B., fruit and vegetables; Sir Trevor Lawrence, Bart., Orchids; Sir J. Pigott, Bart., Crotons and Palms; Sir J. Pease, Bart., fruit and vegetables; Sir F. Wigan, Bart., Orchids; Alex. Henderson, Esq., M.P., fruit and vegetables; Henry Little, Esq., Orchids; R. I. Measures, Esq., insectivorous plants; Ludwig Mond, Esq., Orchids; Leopold de Rothschild, Esq., Water Lilies in tubs and fruit trees in pots.

The Lincolnshire Daffodil Crop.—It is said that Daffodil growers in Lincolnshire have had a disappointing harvest in consequence of the low prices obtained for their flowers. This has been in a large measure due to the early varieties being somewhat later in flowering than usual, owing to the cold weather experienced early in the spring, and the consequent flowering of both early and late varieties within a brief period. The prices obtained for a portion of the Lincolnshire flowers were, it is stated, not more than sufficient to pay the cost of gathering and conveyance to market.

Richmond's New Laboratory.—Some details are now forthcoming with reference to the new physical laboratory to be erected, under Government control, in the Old Deer Park, Richmond. It will consist of two buildings, which will be placed, not adjoining the present observatory in the centre of the park, but on a strip of ground enclosed for the purpose alongside the boundary between the park and Kew Gardens. This site, about 15 acres in extent, commences immediately at the rear of the archery ground in the Kew Road, and runs westward towards the Thames. At the end nearest the road and to the Kew Gardens Pagoda—which will itself be utilised for purposes of the laboratory—will be erected, says the "Morning Post," a somewhat extensive one-storey building, devoted to the testing of commercial samples. At the far end of the site and adjoining one corner of the Queen's Cottage grounds, there will be a smaller two-storey building, which will be used for the purpose of carrying out a variety of magnetic and other physical experiments, success in which imperatively demands seclusion and freedom from disturbance, either physical or electrical. A very small number of persons will be employed at either of these buildings; the work will all be carried on with perfect quietness and within doors, and there will be no smoking chimneys or other disfiguring appendages. The motive power required in the testing house will be supplied in the form of electricity and by cable from outside the park. There will, in fact, be nothing of a character to disturb the bird life or other attractive features of the adjoining gardens, and in their architectural features the buildings, designs for which will be prepared by the Office of Works, will be as unobtrusive as possible.

Death of Mr. Alfred Salter.—We learn with regret of the death on May 5th of Mr. Alfred Salter at Kensington. The deceased was the son of the late Mr. James Salter, a name held in high esteem by those who are conversant with the services he rendered in the cause of the Chrysanthemum. Mr. Salter was seventy-five years of age.

Trees in Dublin.—During the past week the trees which are on some of the principal thoroughfares were given new compost, an operation which is becoming of yearly importance owing to the open grating which covers the roots and favours an accumulation of rubbish. It is strange that some method cannot be devised to obviate this difficulty, as there is a certain amount of deleterious matter likely to enter, which acts as a check on the growth of the trees.

Sweet Peas.—We have received from Mr. W. Hunt, Fern Hill, a box of Sweet Peas, as illustrating their value at this period of the year. The collection comprised sixteen distinct varieties, and we must congratulate our correspondent on their general excellence. The flowers were for this early season of good size and substance, and the colours were splendidly developed; while the growth was exceptionally robust. The varieties included Countess of Powis, Salopian, Navy Blue, Blanche Burpee, Lady Nina Balfour, Waverley, Boreatton, Mrs. Eckford, Monarch, Splendour, Captain of the Blues, Purple Prince, Stanley, and Emily Eckford. Such bouquets as these are more than welcomed in smoky London at this season of the year, when sweetly perfumed flowers are all too scarce.

Stealing Flowers at Shows.—The Temple Show is nearing us once more, and it behoves us all to aid each other in preventing anyone appropriating even a bloom. It is not an unheard-of thing at shows all the country over, and it has been very forcibly brought to my notice once more by someone having taken a bloom off my *Odontoglossum crispum* (*Imperatrix roseum*), at the Drill Hall on the 24th ult. I have no doubt this magnificent variety was chosen for definite reasons. Of course I blame no one connected with the Royal Horticultural Society, as it would not be done were any official near, and we cannot expect our plants to be watched all the time. It is an extremely annoying thing, and the surest means of preventing it is to ventilate the subject in the Press. The old offenders may not care to repeat it; another time they might be detected. —DE BARRI CRAWSHAY, *Rosefields, Sevenoaks.*

Cheap Nitrogen.—There is little doubt at the present time but what one of the cheapest ways to supply nitrogen to our crops is through the manure of well fed animals. Nitrogenous feeding stuffs have, says a writer in an American contemporary, been plainly shown, both by experiments and by practical feeders, to have a marked effect in increasing the amount of milk, and at the same time their use has proved economical. Experiments made at the New Jersey station, which are being followed out for a series of years, show that the manure from cows having a nitrogenous ration produces larger crops than that from cows having a carbonaceous ration; thus the double value of feeds rich in nitrogen is clearly shown. Where a profitable class of live stock is kept and nitrogenous feeds are freely used, the farmer may depend largely upon his manure supply as a source of nitrogen, and let the purchased plant food be mainly phosphoric acid and potash, which will cost only one-third to one-half as much per lb. as nitrogen.

The Black Currant Mite.—Hydrocyanic acid gas has for some time been used successfully in the United States against scale and other insects, and recently the authorities of the South-Eastern College at Wye have experimented with the gas on Currant plants infested by the mite. From trials made on young plants before planting very encouraging results have been obtained. In December and January there are no eggs in the buds, and if the plants are freed then they may be regarded as safe. This was shown to be the case, and now it is recommended that systematic trials should be carried out in orchards where the pest has become established. Where it is desired to do it on a business-like scale, it is suggested that sheets of oiled calico 25 yards long and 8 feet wide should be set up over the bushes, and that three jam pots placed equidistantly apart, each containing 1 oz. of cyanide of potassium, 2 ozs. of sulphuric acid, and 2 ozs. of water, should be placed under the sheeting. The water and acid should first be placed in the pots, then through an opening the cyanide, wrapped in thin blotting paper, should be dropped into the pots, the hand being quickly withdrawn and the hole closed, keeping the bushes under fumigation for forty minutes. This is necessary because of the singularly poisonous fumes which are given off, and which are exceedingly dangerous.

Horticultural Congress at the French Exhibition.—This reunion of horticulturists, which has already been announced, we would now remind our readers, will commence next week upon May 25th. The duration of the congress will be three days, and it is to be hoped that the character of the gathering will be truly international, despite the reports of the backwardness of the exhibition. Those English horticulturists who cannot attend thus early in the season should recollect that the Congress on Arboriculture and Pomology takes place at the Exhibition in the second week of next September.

St. Ives Horticultural Society.—The schedule of the twenty-fifth annual exhibition of this society has reached us from the hon. secretaries, Messrs. R. M. Copley and R. Warner, St. Ives, Hunts. The date of the show, which will be held in grounds adjoining Somersham Road, is fixed for Thursday, July 26th, 1900. The majority of the classes are open only to cottagers and amateurs, but there are several which should draw those who do not come within either of these sections. There are upwards of eleven dozen classes, and broadly speaking every phase of seasonable gardening is covered. Schedules and any further necessary information will be provided by either of the secretaries named above.

Wolverhampton Chrysanthemum Society.—At a general meeting of the committee of the above society, it has been decided to abandon the usual annual show for this year. Owing to the heavy calls upon the subscribers, it is feared that it would not receive the support which has been accorded to it in the past. It may be mentioned that another reason for the decision of the committee is the poor support which the society received last year; this the committee do not think was from any diminution of interest, but was no doubt owing to the general depression consequent upon the commencement of what is proving to be a protracted and costly war. It is the intention of the committee, however, to hold the show next year, when it is hoped prospects will be brighter in every way, and that the public will combine to make the show a success.—J. WHEELER, *Hon. Secretary*.

Beckenham Horticultural Society.—Mr. James Hudson, V.M.H., read a paper before the members of the above society, on May 11th, at the Beckenham Public Hall, on "The Cultivation of Fruit Trees in Pots." The subject was dealt with in a masterly manner. Numerous instances were given of rotations of three distinct kinds of plants being grown in same house in one season; for instance, Peaches, Nectarines, and Plums, removed the third week in June, made way for a crop of Melons, to be followed by Salvias, and ready again for fruit trees. Nine or ten-inch pots were considered ample, and annual potting was recommended. The temperatures were very important factors, too high a night heat conducing to wood growth. Peaches, Nectarines, Plums, Cherries, Figs, Apples, Pears, and Apricots were all dealt with, and much useful information gathered by those present. Messrs. Taylor, Burge, Crosswell, Webster, Price, Russ, and others joined in the discussion, and unanimously accorded a hearty vote of thanks.—M. W.

Agricultural Societies.—An important meeting was recently held relative to an organisation to be formed to manage the New Ross Agricultural Society. There was a representative gathering of all classes, especially of men whose sphere of activity lies in land management. The present move was convened by circular, and it was held in the Court House of New Ross, under the presidency of Captain B. Hamilton. After the secretary, Mr. Tyndall, had read the minutes of the previous meeting the chairman referred to the lines on which they intended to work the society; he did not, he said, mean to alter the constitution of it, but to widen the field of operation; he referred to a feeling which had gained a certain amount of credence, that they intended to have something to do with the co-operative movement, and he desired to give that rumour an absolute denial. The real object was to perfect the two following ideas:—1, The development of agriculture, and 2, the breeding of stock, and he hoped that the farmers from all quarters would lend a helping hand. Mr. Barron wished to know if they would be entitled to receive a grant from the new Agricultural Board. The secretary in reply thought they would get a grant. Mr. Thorpe proposed that the old committee be retained, and to add the requisite number of the new society, which was duly seconded and carried. Mr. Jeffares suggested prior to the dissolution of the meeting, that any person present ought to have the opportunity of joining, which was declared open, and close on sixty handed in their names. Officers for the ensuing year were duly elected.—A. O'N.

Horticultural Club.—The usual monthly dinner and conversation took place on Tuesday 8th, but two events hindered the attendance from being a large one—the funeral of the late Mr. T. B. Haywood and the annual dinner of the Royal Gardeners' Orphan Fund. The meeting, however, was a very interesting one, and an address was given by Mr. de Graaff of Leiden on Java, in which were very vivid descriptions of both the flora and fauna of that tropical island. Many questions were asked concerning the subjects brought forward, and much interest was excited by the wonderful account of the Bamboos, which grew to a height of 150 feet. The chairman, Sir J. D. T. Llewelyn, Bart., M.P., proposed a vote of thanks to Mr. de Graaff, which was cordially agreed to by the members present.

Mr. John Green.—We learn that Mr. John Green, F.R.H.S., managing director of the horticultural department of "Hobbies, Ltd.," Norfolk Nurseries, Dereham, has been elected chairman of the Dereham Urban Authority, and *ex officio* Justice of the Peace for the County of Norfolk.

A Unique Park.—Arizona's petrified forest—one of the most interesting natural curiosities of America—is to be protected by law and made into a national park. It lies near the Grand Cañon of Colorado in Apache Country, and the fossil trees were probably silicified in a lake holding silica in solution. One feature is a trunk 100 feet long, spanning a cañon 45 feet wide as a natural bridge.

A Contrast in Weather.—Reuter telegraphs from Chemnitz (Germany) that there was a heavy snowfall on Sunday night. In New York it is very hot. In London we are all shivering. The fruit orchards in East Kent, which were all in full blossom, have suffered severely.

Snow in May.—A South Lancashire correspondent writes that notwithstanding the far advancement of spring the weather in the County Palatine continues exceptionally cold and disagreeable, very few days of real spring having so far been enjoyed. On Saturday morning rain, accompanied by snow and sleet, which, however, melted as it reached the ground, fell for several hours.

Agitation Against Poisonous Compounds Act.—This movement has now taken an active and concrete form, and a strenuous effort will be made to secure the repeal of the Pharmacy Act of 1868. This reserves to chemists alone the privilege of selling the large quantities of weed-destroyers now vended in the market, which right the new society opposes as a monopoly, and contrary to the spirit of the Constitution. This society, whose title may be shortly stated as "The Traders in Poisons' Protection Society," has its offices at 5 and 6, Clement's Inn, Strand, London, with Mr. T. G. Dobbs as secretary, and Mr. G. H. Richards as treasurer. A strong representative committee has been formed, and a petition for presentation to Parliament has been drawn up, which all who are interested in the present movement are urgently requested to sign, when they receive the copies now being prepared for distribution in various districts. Clearly the Act of 1868 was never intended to be applied as is now sought, for at the time when it was drafted the great commercial development of the weed-killer business could never have been foreseen by the Legislature.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1900.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
May.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday.. 6	E.S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday.. 7	S.W.	59.0	53.4	63.5	47.6	0.10	55.3	51.5	48.5	40.1
Tuesday.. 8	N.E.	54.0	49.5	62.3	51.8	—	51.9	51.9	48.8	48.5
Wednesday 9	W.N.W.	58.2	51.6	61.6	39.7	0.01	54.2	52.4	49.1	30.8
Thursday 10	N.N.E.	49.9	49.5	55.3	49.3	0.09	54.1	52.3	49.3	43.9
Friday .. 11	E.N.E.	49.4	48.6	52.8	47.5	0.01	53.4	52.1	49.5	47.2
Saturday 12	E.N.E.	48.8	43.7	57.6	35.2	—	50.9	51.8	49.8	24.8
		46.6	42.0	50.1	44.1	—	51.2	51.3	49.8	38.9
MEANS ..		52.3	48.3	58.3	45.0	Total 0.21	53.4	51.9	49.3	39.2

A dull, cold week, with little or no sun, and a sharp frost on the morning of the 11th inst.



The Chiswick Trial of Tulips.

ALTHOUGH the report of the trial of Tulips at Chiswick affords pleasant reading, as noted by "F. W. H.," p. 396, it is a moot point what constitutes quality in a single Tulip. Take, for example, the somewhat quaint form of the blossoms of *Tulipa cornuta*, a garden species. Many persons prefer this as a flower garden ornament to any variety named in the report. The admiration of any variety is quite a matter of taste. Personally I look upon Keizers Kroon as one of the finest Tulips in existence for the decoration of gardens in the spring. Yet this variety is hardly mentioned. The superiority of one variety over another depends upon tangible results more than taste—individual—in colour.

Even in questions of colour in Tulips some might prefer a small-flowered white variety to a larger one of the same colour. I fail to see the utility of a Tulip trial; the marks given to each variety by the committee might easily be contradicted by another committee on the following day, as both can only be the personal opinion of individuals; or, perhaps, as your correspondent points out, it is a test of the Chiswick soil. After all, this is a poor result to strive for, especially when we consider the far reaching benefit such trials are supposed to bestow. At least a dozen varieties of single Tulips might be named that meet with approval by many persons which are not even mentioned in the report. Of all plants I think a trial of Tulips is of the least benefit to the general public, as there is so little chance of giving an authoritative opinion upon a subject embodying nothing beyond personal opinions.—B. W.

A National Rose Day.

I QUITE agree with Mr. William Paul and "V. M. H." about this, and that the day should be when there are plenty of Roses. But it would be hard upon our national Saint to deprive him of the national badge, and I suppose we can scarcely expect St. George to change his day. I agree also in the idea that we took the Rose badge from the Romans, just as the Britains took the dragon which had latterly supplanted the eagle as the Roman standard. Pliny speaks of "Albion, so called either on account of its white cliffs, or white Roses which greatly abound there." Certainly Roses were dearly loved of the Romans. We have not yet discovered a conservatory at Silchester, though an abundance of glass of all kinds from it is in the Reading Museum. There may possibly have been several, for there were many grand houses there, and Martial distinctly speaks of this kind of protection:—

"Lest wintry frosts should blast the shrinking fruit,
Or winds too piercing nip the tender shoot,
Through lucid walls, that check cold Eurus' sway,
Sol kindly pours the genial warmth of day."—viii, 14.

With regard to our English time of adoption of the badge, I hardly think we can get back further than Mr. Paul's "Count Egmont." He was sent about 1277 to Provins with troops to avenge the murder of the mayor of the city, and is said to have taken for his device and brought back with him to England the red Rose of Provins, which Tribut Comte de Brie had brought from Syria on his return from the Crusades.

Two well known regiments have their day for wearing Roses. The Twentieth on the anniversary of Minden (August 1st, 1759), wear red Roses in memory of that glorious day, when they fought in a Rose garden. The Fifth Fusiliers wear red and white on April 23rd, St. George's Day. The day the Twentieth observe would certainly suit the general public best. April 23rd condemns many to only artificial flowers, but still I do not see how we can throw overboard St. George. To add one to Mr. Paul's Shakespeare quotations, let us remember King Henry Fifth's exhortation—"Cry God for Harry, England, and St. George!"—A. C.

Garrya elliptica.

As a member of the Floral Committee, before which the log alluded to by Mr. Jenkins on page 373 was shown, I had an opportunity of seeing the specimen, and while regretting the reason of its exhibition, I could not help remarking that its size was not in any way remarkable for thirty years' growth. I have not tested its hardiness as an independent shrub. I am able to say that it is not positively hardy, even here in the south of Hampshire. Twenty years ago I put out two small plants, one on each side of the front door of Swanmore House, having a north-westerly aspect. Both plants made vigorous growth and

bore a heavy crop of catkins annually. In fourteen years the plants grew 23 feet high, and formed a complete bower over the doorway, and were generally admired. But, alas! a severe frost injured both plants so much as to necessitate their being cut down almost to the ground line. An alteration taking place shortly after in the structure the plants were destroyed, and have never been replaced. An extremely fine specimen used to grow (and probably does now) in the Trinity College Garden, Dublin. For covering walls on any aspect *Garrya elliptica* is a charming plant, even if it bore no catkins, as the deep green leaves have always a cheerful appearance. It is easily propagated by inserting half-ripened cuttings in sandy soil in a cold frame at the end of August, keeping them shaded for a time if the frame is stood in a sunny spot. Abundance of water at the roots and overhead during summer hastens its growth.—E. MOLYNEUX.

A London Horticultural Hall.

STRENUOUS antagonists of the proposal of the Royal Horticultural Society to provide a new garden in place of Chiswick prefer to urge the erection of a London Horticultural Hall in lieu thereof. Now I venture to ask of them and of all who support their views, do they regard the provision of a satisfactory horticultural hall in London, with offices and appurtenances, as being within the range of philanthropic effort? That is the question. It is utterly useless to discuss a subject of this nature in the gardening press unless some scheme is forthcoming that shows how the proposed hall can be provided. That such a building will ever be erected by voluntary subscription is quite out of the question. There remains then only one other course, and that is to float a London Horticultural Hall Company. But to constitute a company the promoter must be prepared with a prospectus of tangible facts, and the first course therefore is to form a small syndicate from such gentlemen as Mr. A. W. Sutton, Mr. C. T. Drury, Sir Michael Foster, Sir W. T. Dyer, and others, who appear so desirous of seeing the hall provided.

This syndicate must secure the offer of a suitable site, which must be fairly central and easy of access. Then it must obtain plans for the proposed erection, and estimates for building it. Then the council of the Royal Horticultural Society must be approached, and being offered favourable terms be induced to become tenants of the hall for its fortnightly shows and meetings, and of certain offices permanently. The council now pay for the Victoria Street offices and Drill Hall about £330 annually. No doubt that body would not mind paying a rent of £400 yearly for better accommodation. The hall could be let for other purposes on all days not occupied by the R.H.S., and might in that way produce an additional £1000 a year. If beneath the hall there were good shops and offices, those not occupied by the R.H.S. might bring in as rent £650 annually, and thus a total rental of £2000 might be obtainable. But to get such a hall a suitable site must be secured, and that would be a matter of grave difficulty. Mr. Drury has mentioned the new Abingdon Street site, on the Thames side at Westminster, about to be cleared by the London County Council. There is also the new L.C.C. street, about to be made from the Strand to Holborn—a splendid position. Both these would, however, be enormously costly.

Do those who want a horticultural hall in London realise what area would be needed? They complain that the Drill Hall is not large enough, yet the Drill Hall is, for London, a very large area; indeed, one of the finest of its kind. Really, to secure a suitable hall the frontage must not be less than 80 feet wide, and the depth 150. That means a total of 12,000 square feet. Does anyone imagine that such an area could be obtained on either of the sites named, or indeed in any central position, at a less cost than £1 per foot, or a sum of £12,000? But it would have to be realised that buildings erected on such, or any good sites, would have to be of lofty elevation. The enormous cost of ground in London now compels the erection of these lofty structures, that the outlay for the ground may be recouped. Does anyone suppose that it would be possible to stop short with a ground floor hall only in such case? Even if the ground area were covered with shops and offices, still a very lofty hall would have to be erected over them, and were other buildings of a much more lofty character erected on either side, what becomes of the hall's lighting, except with artificial aid?

To place a huge hall for exhibitions above a second tier of offices would never do, indeed is quite outside practicability. Then for the special purpose for which the hall is needed the building would have to be fitted with one or two large hydraulic lifts to enable plants to be raised to the hall, and there should be space beneath to enable vans to draw in for loading and unloading. Now supposing the promoters of a hall company had resolved to face and overcome all these difficulties, and set about floating the company, they would need at the very least a capital of some £50,000. The rental would pay rates, taxes, lighting, and salaries, and leave a small sum for a repairs fund; but whence would come dividends for the shareholders' goodness only knows. Still, there are brave men in the financial world, and with, when the war is over, plenty of money going abegging for investment, who can tell that a London horticultural hall company will not float?—L. S. D.

Rooksnest.

NEVER before has the county of Surrey generally and the district of Oxted in particular been so much discussed in the pages of the gardening press; and this has sprung from the suggestion of the council of the Royal Horticultural Society to acquire land at Limpsfield. On one point the controversialists have been unanimous, and that has been to the exceptional natural beauty of this part of Surrey. It is possible that within a given circle round Oxted station one can find scenery that of its kind is unexcelled in the British Isles, and which is as well worthy of the visits of searchers after rural charms as the more rugged crags of Scotland, or of Derbyshire. It was not, however, to examine the much debated Limpsfield site, or to travel far to view the county's beauties that the train was left a week or so ago at Oxted; the object was to see the compact gardens and grounds of Rooksnest, which, situated about two and a half miles from Oxted, is at present the residence of the Hon. P. C. Glyn, head of the great house of Glyn, Mills & Co., who are the bankers of the Gardeners' Royal Benevolent Institution.

villadom. We enter the park from the main road, and find it flanked on the one hand by a broad belt of trees crowning the rising ground known as the Warren, and on the other by undulating grass land with clumps of trees, and here and there individual specimens. The expanse is not very large, but it is in good condition, and is charmingly wooded. This drive, moreover, affords one of the best views of the mansion of Rooksnest, which, as the illustration shows (fig. 112), is of a formal rather than a picturesque character. It is somewhat low perhaps for its other dimensions, but it gains from this an aspect of solidarity, and creates an impression that within those square walls can be found handsome and comfortable rooms such as are absent from more modern and possibly more ornate erections. Through the flanking tree belt, to which brief reference is made in this paragraph, runs the Warren Path; a cool, sequestered walk that extends from the gardens near the mansion to the lodge at which we entered.

The Conservatory and its Camellias.

The conservatory, attached as it is to the mansion and built so as to harmonise with that structure, is one of those erections which gardeners

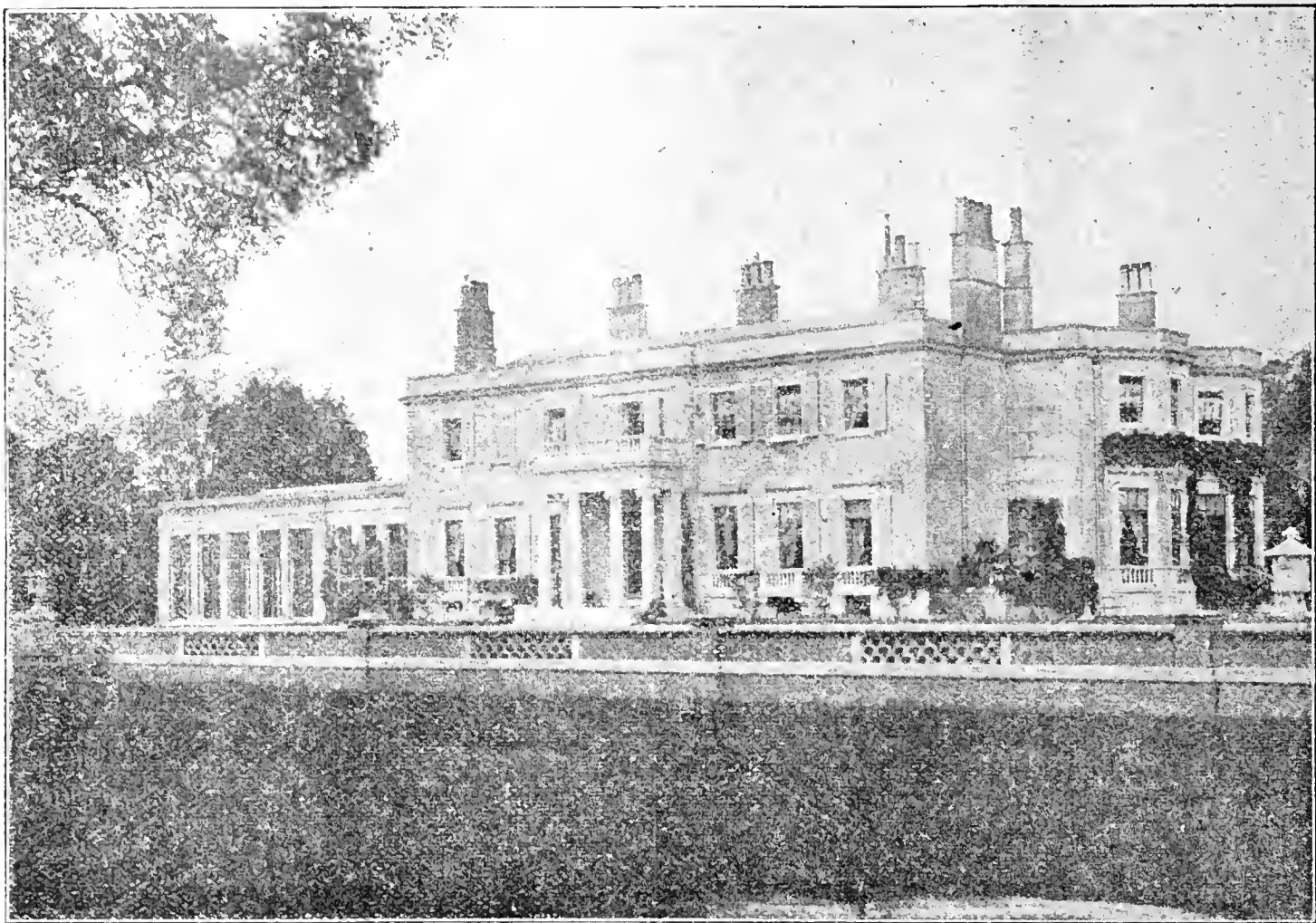


FIG. 112.—ROOKSNEST.

The gardener-in-chief, or rather the gardener and bailiff, is Mr. Jas. Friend, under whose guidance we were soon travelling over the road to Rooksnest. The route leads through the ancient portion of Oxted, which as a country village has few attractions, though it is placed in such a beautiful setting. The old church on the lower ground looks well with its foreground of gardens in all the charm of the period of the fruit blossom, and its background of hills rising abruptly to a considerable altitude. Here and there amidst the trees that clothe the slopes are villa residences, whose red bricks show conspicuously, if not attractively, from the bountiful vegetation. It is a district of villas, possibly because it is fairly accessible from London, but more probably on account of its great and thoroughly deserved reputation for healthiness.

Across the Park.

As progress is made over the road, however, the character of the surroundings change considerably, and one sees isolated, old-fashioned cottages, and the larger houses have few indications of pretentious

abhor, as it is practically impossible either to give the place a really attractive appearance or to keep plants in proper health therein. One of its lofty sides is of glass, with great stone pillars between, while the back is entirely of stone or brick. At one end is the door, and at the other the mansion, to which entrance is made by ascending a flight of steps. The central portion is occupied by a few large Palms, and the sides are partially clothed with any plants that will travel upwards satisfactorily, Fuchsias being perhaps the first favourites. Beneath the roof are climbers, with Roses as their best representatives; to secure the blooms it is necessary to mount a twenty-round ladder. Then, too, there are smaller foliaged plants, and of course when the family is in residence every endeavour is made to keep the house gay with flowers. One feature, however, it does possess, and that is found in the Camellias that hide the back wall from view. They are magnificent plants, and appear to be in the very best of health. Even when not producing, as they do annually, many hundreds of flowers, they are peculiarly handsome on account of their dark green leathery looking foliage; it would be difficult, if not impossible, if these were removed

by death or otherwise, to find other occupants that would fill the vacancy with such entire satisfaction.

The Flower Garden and Pleasure Grounds.

Of flower gardening pure and simple there is comparatively little, and the beds, which in the summer must be gay, are in the spring filled with deliciously fragrant Wallflowers to afford innumerable bunches for despatch to London. Later these will take on a more formal character no doubt, but if they are more beautiful they will certainly not contain any plants whose flowers will diffuse a sweeter perfume than did the Wallflowers a week or two back. Flowering trees and shrubs are fairly numerous about the pleasure grounds, but as vegetation is usually somewhat late on these Surrey hills, few plants were in flower. A Rhododendron here and there was showing colour in its trusses, but other attractive plants had yet to develop their buds. Close to the mansion is a rosery, but here again one would need to go in the warmer days of summer to see the wealth of flowers on the

plants are in immense masses, and in others stand as isolated specimens, and the major portion of the varieties are comparatively old. This, however, in such circumstances as the present is of little moment, as those sorts that produce fine trusses of brilliantly hued flowers are what are required, whether they be new or old. There are thousands of plants, and when one is seen rising in the form of a bank to a height of 20 feet or more, and carrying trusses on every growth, the effect is literally superb.

A Corner in Narcissi.

When one commences to speak of a corner in Narcissi or anything else, the mind of the reader will probably turn to the gigantic corners in Wheat and other commodities, that have been formed to force up prices and make the fortune (or prove the ruin) of the cornerer. The particular corner in Narcissi at Rooksnest is, however, very different from this, and has been formed with a much less questionable object in view. As a matter of fact it is a small space just without the walls of



FIG. 113.—THE LAKE, ROOKSNEST.

several plants. A charming stretch of grass, which in the summer is delightfully shaded with trees, leads to the margins of a handsome piece of water, which adds materially to the charm of the estate. On every hand there were signs of life—in some trees and shrubs well advanced, and in others only observable in the swelling buds. Evergreen trees of course are there in numbers, and play a worthy part in an attractive scene, but no names can be mentioned in the space at disposal.

A Rhododendron Forest.

It is more than likely that nine out of ten persons visiting Rooksnest in May, and being subsequently asked what they considered the finest feature of the estate, would vote for the American garden. This is what is termed at the head of the paragraph a Rhododendron forest, and it has an area of about three acres. Traversing the winding paths one passes beneath the shade of veritable giants, whose gnarled stems and handsome leafage would prove sources of inexhaustible interest even when no single flower truss could be found. In some places the

one of the kitchen gardens, and surrounded by trees, in which are thousands of Narcissi. These have not been purchased for this express purpose, but for pot culture, and having done their duty indoors have been called upon for further service in this now delightful corner. There are, of course, many varieties represented, and the available space is not yet fully occupied, and they afford thousands of beautiful flowers for cutting during April and May. Narcissi, too, are found in beds and shrubby borders, with others on the grass of banks, where they will thrive; but the bulk of flowers for adorning the mansion, both at home and in London, are drawn from that corner in Narcissi, of which a counterpart might be formed in every large garden in the kingdom where such does not already exist.

A Gay Greenhouse.

Under glass the brightest spot on the day of this visit was the greenhouse, which was simply ablaze with flowers. Instead of having them spread throughout the various structures Mr. Friend had concentrated the several flowering plants in one with the happiest results.

Of course every single plant was not in this one house—a few remained in other places, but the main supply was in the greenhouse noted. It would be no easy task to name the flower that comes to us at this particular season of the year that was not represented by one or more examples, and the simple statement of this fact will be sufficient for readers of the *Journal of Horticulture*. One, and one only, may be specified, and that is the *Schizanthus*, of which *S. retusus* was the finest. These alone would have made a singularly charming display. In the other houses there were many hundreds of plants, large and small, that are utilised for various decorative purposes both in the mansion and in the conservatory. Considerable stocks are maintained of the most valuable kinds for the object in view, and the whole of the plants were in excellent health. Chrysanthemums have long been a strong feature at Rooksnest, and the collection in the frames at the present moment looks as though it will prove well able to maintain Mr. Friend's reputation as a thorough cultivator rather than an exhibitor.

Fruits and Vegetables.

No department of the Rooksnest estate, whether in or out of doors, is better maintained or reflects greater credit on the gardener and his assistants than the fruit and vegetable section. Under glass the Grapes and Peaches and Nectarines were at the time of this visit in most creditable condition. They were healthy in wood and in foliage, and were showing for an abundance of fruit. There were the customary stages of growth in the different houses, and over all was the same stamp of excellence of management. Strawberries, too, were equally satisfactory. The outdoor fruit comprises all the kinds usually found in a well equipped garden, and it can be said for the Apples and Pears that the value of light and air for every portion of the tree is more thoroughly appreciated than is generally the case. Each branch stands well clear of its neighbour, and the advantage of openness is found in the increased excellence of the crops. Then, again, Mr. Friend is a believer in judicious root-pruning, and practises it with that discrimination which marks the expert. The bush fruits and Strawberries were all in the same commendable state. In the vegetable quarters there were signs on every hand of what is to come, with somewhat of reality in the pretty bed of Cabbages. Plans have been well laid and seeds have been sown, some in beds and others in permanent positions, and the future must prove whether the "end justifies the means," as the writer has little doubt will be the case. There are Potatoes in the frames, and Asparagus in other places—both necessary, both excellent. Probably there are other supplies, but of these the writer cannot speak from personal experience or observation, and consequently they must be passed.

Envoi.

These rambling notes must be brought to a close. They have not told all that is to be seen in the grounds and gardens of Rooksnest, but they are given as a small tribute to their excellent condition on every hand. Other visitors will go, and they will admire other features, and rightly so, for much might still be said. But my task for the moment is done, except for the fact that I must bear public testimony to the courtesy and kindness that were extended by both Mr. and Mrs. Friend to one who visited them as a stranger, but who left them, if they will permit the play on their name, as a friend.—ZINGARI.

THE COFFEE PLANT.—Nothing can be more beautiful and interesting than studies of the annual blooming, budding, growth, and ripening of Coffee in the West Indies, and its gathering and preparation for the market. The leaves, which are ovate in form, are about 4 inches long. They are produced opposite in pairs, and are dark green in colour. Similar in texture to the Mammer leaf, they have the waxen surface of the Indian Laurel. The foliage is perennial. Shooting out from the bases of these pairs of leaves, after the manner of our Cherry blooms, are seen the Coffee blossoms, almost precisely like a diminutive Tuberose, in clusters of three to six, snow white, and with an indescribable delicate, subtle, and delicious odour. For two months in spring time, says a contemporary, a Coffee plantation is simply one vast plain of white, a region of intoxicating odour, with the blue sky half shut from sight by myriads of honey-seeking butterflies, humming birds, and brilliant-winged songsters, fluttering and circling in an apparent ecstasy of revelry and delight. For nearly six months new blossoms come as the old ones disappear. Blossom and ripening berries are continuous. As the breezes snow the dying blossoms upon the ground, tiny green buttons take their place. These are the growing fruit. They change to a pale pink, then to a bright cherry, finally to a reddish purple. Then it is ripe and ready to gather.

The Season of Blossom.

THE marked feature of the latter half of the month of April was the rapidity with which vegetation came forward. During the opening weeks of the month the wind set itself about north-east and point-blank refused to move, with the result that growth made little headway, and while one section of the interested community spoke somewhat dolefully of the late spring, another thanked the north-easter for its consideration in keeping things back. While days remained dull and the wind listing, fruit buds kept wisely within their protective covers, and growers felt less fearful than if they were wide open. Peaches, Nectarines, and Apricots came out in spite of gloom and cold. Fortunately most of these had the protection of walls, and a further covering of close-meshed netting kept them safe from harm, and crops promised fairly well.

Late in April a transformation scene was brought about by the unexpected change in the weather, which was as rapid as it was remarkable. What kind of a fruit year are we going to have? is a question that everybody is asking where its culture is an important industry. At the time of writing this there is a splendid promise of stone fruit, and trees that a week previous had hardly shown signs of moving were white over with flower. Plums and Damsons are very full, but it is too early yet to make sure of a crop, because there has been as much or more bloom many times before, and all looked fair and promising. Then came the killing frost or the cold north-easterly wind, bearing on its wings hordes of aphides—pests which took sole possession of every green tip on Plum and Damson, and flowers instead of forming fruit withered and fell, and blighted hopes were as common as blighted trees. With experiences like this before us it would be foolish to prophesy, but we may at least hope that last year's scarcity of stone fruit will be changed in 1900 to one of plenty.

Perhaps at no time of the year is the country more beautiful than when fruit trees are blooming, and I know of no district where this beauty may be seen more fully than among the Kentish Cherry orchards. The individual flower has a charm of its own, peeping out as it does from among bursting tips of vivid green, but collectively they make a glorious display. We read of the brilliant flora of the tropics, but I question if any effect there can surpass the charms of mile after mile of Cherry orchards all aglow with flower. And in the district round Sittingbourne and Maidstone may be seen the capacity of this fruit when at home; for in many of the orchards are giant specimens, with mighty limbs more like those of a forest Oak than an ordinary fruit tree. How long they have been in bearing it would be hard to say, and it would be interesting to know how much hard cash they have been the means of putting into the pockets of the growers, for a good Cherry orchard is an excellent paying concern. Flowering time is only the beginning, and though early prospects please the grower, it is a later picture that bids him with the greatest satisfaction, when rich red fruits peep in quantity from a canopy of verdure, particularly if salesmen are clamouring and prices are high.

Pears, like the rest of hardy fruits, came on amazingly during the last week of April, and prospects are encouraging. On many occasions they have bloomed earlier, and perhaps more fully, but this does not insure a crop by any means, and unless some unfortunate circumstance arises there ought to be a good supply of this valuable fruit. It is yet early to say much about Apples, but the warm change in the weather has had its effect on them, with the result that they have followed more closely on the heels of the Pears and stone fruit than is usually the case. Bush fruits, such as Gooseberries and Currants, looked backward at Easter time, but the scene has changed. They are masses of green, with every shoot wreathed with fruits, and in gardens and plantations there are prospects of heavy crops.

These were impressions gathered among the fruit as April drew to a close. A few days ago it would have been impossible to give them, but Dame Nature is the most remarkable of quick change artistes. Perhaps before these lines appear in print the north-easter will have returned, and overcoats again pressed into the service. I say it may be so, for we have had bitter experiences of this kind before; but I hope such will not be the case, for the sake of the fruit and those to whom scarcity or plenty means so much.—G. H. H.



Pine Needles.—The Pine needles of South Oregon are being utilised. The needles are first boiled and then run between horizontal wooden rollers, which extract the juice. This is called Pine needle oil, which is supposed to possess medical properties. The pulp is used, says a transatlantic contemporary, as a medicated material for upholstering, and it is also said to be a good substitute for horsehair. It is said that insect pests will not live in furniture that has been upholstered with Pine needles.

Strawberry St. Antoine de Padoue.—Whilst this variety seemed to present an undoubted advance on its parent, St. Joseph, when presented to the Fruit Committee at the Drill Hall last week, the committee all the same thought that it exhibited no merit as a forced variety, indeed was for such purpose a poor variety compared with its great parent, Royal Sovereign. The committee were not informed as to whether the plants sent, each carrying one ripe fruit, were brought on in considerable warmth or at what temperature, but if such fruits could be had in the gentle temperature of an amateur's greenhouse in May no doubt the variety would be acceptable for such a purpose. Naturally the committee wish to see the new variety in the autumn, when it can be properly compared with St. Joseph, as not so much a perpetual as an autumn fruiter.—D. K.

Apple Bloom.—This has been marvellously abundant and beautiful. No trees that are fruitless can excel in floriferousness. Thousands of Apple trees as seen this spring literally garlands of flowers, and not a leaf visible. It is noticeable that the bloom is very fine—indeed, it is impossible that it could be finer or of richer hues. I do not build up great anticipations upon this immense flowering, as we all know too well how often the promise in such case, and how poor the realisation. Our best hopes are founded not on the abundance, but rather on the fine character of the bloom; the abundant rain of the winter, which gave trees so thorough a soaking; and the fact that we have not had a great Apple crop for two years. I note that Pears are setting fairly well—indeed, a moderate crop of those fruits is always best. Plums, too, so far look well, and of those and Cherries there may be almost a glut, which is no gain to anyone.

Prunus persica.—Among spring-flowering trees this, with its numerous varieties, makes a conspicuous object; and few trees are more easily grown, or can be depended on to give a better display. A great range of colour exists, from pure white, through various shades of rose and pink, to deep red. Many of the varieties have double or semi-double flowers, and are a decided acquisition, the flowers lasting much longer than those of the type. They are to be obtained either as tall standards or bushes, and in either case they make a fine show. They make admirable plants for forcing, and may be either lifted and potted in autumn or grown in pots in a similar manner to fruit trees. In the latter case they should be well fed while growth is active, and stood outside when all danger of frost is gone, so that the wood may become thoroughly ripened. Whether flowering naturally out of doors or in pots in the conservatory, the bright colouring is equally attractive.—R. G. K.

Protecting Tree Stems from Cattle.—I have not elsewhere seen practised the method Mr. John Miller employs at Ruxley Lodge, Esher, for the protection of some Sweet Chestnut tree stems from injury by sheep and horses. The trees forming an avenue in the park have stems ranging from 12 to 18 inches in diameter. They are all coated with an armour of fairly straight bean rods, some 6 feet in height, placed close together, and secured round the stems by stout galvanised wire ties three in number. When the copse cutting proceeds on the estate straight sticks are selected for this purpose when needed, although the armour usually lasts for three years. If the tree stems swell so fast that the wire ties are hurst, and that occasionally happens, other ties are fixed and drawn tight by twisting the ends with pincers. The plan adopted of getting the rods close to the trees is to place round them a stout cord, to one side of which is fixed a thick stick, and that being twisted draws the rods close and tight; then the wire bands are added, and the work is complete.—A. D.

Tomatoes as Medicinal Plants.—According to a continental journal, it appears that a Scotchman, after an experience of several years, is convinced that the daily use of Tomatoes is an excellent remedy for liver troubles. In America, also, the use of the Tomato is considered as a remedy, and prized very highly as a strengthener, and for purifying the blood.

Burning Weeds.—It is a mistake, says a transatlantic contemporary, to let weeds go to seed in the garden or around the farm, under the impression that they can be destroyed if gathered in the autumn and burned. In the first place, the job is apt to be forgotten until most of the weed seeds have been scattered. Even if a weed is burned its seeds may not be destroyed, unless a hot fire of brush is first made and the seeds are thrown on a mass of burning coals. If weeds are piled in heaps they burn slowly, and, as the seed falls to the ground it is protected from burning by the stratum of carbonic acid gas that is found at the bottom of all slow-burning fires.

Cleanliness in the Garden.—Some men can do twice as much on an acre as another. It is order, system, and cleanliness that enables him to do it. "Dirt is matter out of place." That is a true definition. I once found fault with a man, who was then a partner, that his rubbish pile contained everything from decent potting soil to broken glass, hoop iron, and empty beer bottles. He rather peevishly replied that he had no time to spare, and was glad to get rid of the stuff out of the greenhouses. That "time" excuse is the worst of all, and the man who lets his wagon stand out in the sun till the hubs are cracked, has always the most time to spin a yarn, or see how much old Bill Jones' cows bring at auction. If my friend had had a pile for stuff that was purely rubbish, and another for old soil and plants and vegetable matter that would come useful some day, it would have been time and money saved.—("Scott's Florists' Manual.")

Early Cabbages.—The race of small first early Cabbages now so plentiful has proved to be a great boon to gardeners in helping to tide over a difficult period in gardens, when all other descriptions of green stuffs run short. The seedsman in selecting his stock seems to secure one that is very true to character so that the plants heart-in simultaneously. That is undoubtedly a good feature in any stock, but it is not entirely acceptable to a gardener who in a bed of several hundreds of plants likes continuity. A big breadth turning in all at once looks well, but is not a convenience; a breadth that turns in and furnishes a supply of hearts for some three or four weeks is better. That has generally been a feature of an ordinary stock of Ellam's Early, but it seems, in spite of all the care taken, to characterise most selections. Thus it is difficult when seeing only a few hearts of the very earliest plants to determine whether the entire breadth is the same or whether many plants are sufficient.—A. KINGSTON.

"Darwin" Tulips.—That most interesting section of late Tulips grown so abundantly by Messrs. Barr & Sons at Long Ditton, evidently owe their popularity to the fact that they are almost entirely self-coloured. The section is very beautiful for garden decoration, because the breaking tendency observable in the florists' section is rare with Darwins, hence their original characters are well preserved. It is a great feature of these varieties, and the feature runs through all the late section, that once planted fairly deep in garden borders, they continue to grow, flower, die down, and reappear for generations. We like for such purpose to plant in clumps of half a dozen, always taking care that the position of each clump is marked that the bulbs be not injured by digging. Of course the bulbs do well lifted each year, as is the case at Long Ditton. But all gardeners do not care to take so much trouble. The following give a fine selection—White Queen, bluish flushed rose; King Harold, rich crimson; Corregio, bluish-lake, very charming; Peter Barr, heavy maroon; Charles Dickens, bright reddish rose; Joseph Chamberlain, blood red; May Queen, soft rosy pink; Sultan, almost black; Zephyr, rose shaded heliotrope; Professor M. Foster, rich carmine shaded vermilion; Purple King, purplish crimson shaded maroon; and Golden Beauty, brilliant yellow, though not a Darwin. All these bloom simultaneously. Of other, or Fancy Tulips, the following are beautiful—Picotee, white, heavily edged red; York and Lancaster, white flaked red; macrocephala, scarlet self; Golden Crown, bright yellow feather edged red; elegans alba, white fine carmine edge; Fulgens, crimson scarlet; Summer Beauty, white flaked and flushed scarlet lake; Buonaventura, yellow heavily flaked scarlet, a real beauty; vitellinum, lovely soft lemon; and Chamæleon, having several quaint colours.—INSPECTOR.

The Royal Horticultural Society.

Scientific Committee, May 8th.

Present: Dr. M. T. Masters (in the chair); Mr. F. Im Thurn, Mr. Shea, Rev. W. Wilks, Mr. Mawley, and Rev. G. Henslow, Hon. Sec.

Peach trees diseased.—The following report was received from Dr. W. G. Smith upon the specimens received on March 26th. He also observes that he is continuing the cultures of the fungi, as at present he is uncertain between "Fruit rot" (*Monilia fructigena*) and a form of *Cladosporium*. "The cause of discolouration of the bark of twigs is evidently a fungus which can be found in these parts. The absence of good examples of reproductive organs renders identification uncertain. In the twigs the fungus has passed the winter, and made its way into the leaf buds and flowers, causing the damage there. With a fungus such as this the course of treatment is summer spraying. Peach foliage is delicate and the spraying solution must be dilute; for example, Bordeaux mixture made with not more than 2 lbs. copper sulphate and 2 lbs. quicklime in each fifty gallons of water. The foliage should be thoroughly wetted with a fine spray, preferably that given with a sprayer like those supplied by Strawson and other firms. In winter pruning should be carried out, so as to remove all discoloured twigs. This treatment will probably require to be carried out for several seasons. The fungus might be identified if specimens of foliage were sent during the summer."

Vine leaves, diseased—With reference to those sent to a previous meeting, Dr. Masters observed that no mites could be detected by Mr. Michael, who carefully examined them; but that his opinion was confirmed that the diseased condition was most probably due to a young condition of *Gloeosporium*.

Larix occidentalis.—Dr. Masters showed young cones of this species from Oregon, characterised by having green bracts, the European Larch having them of a red colour. It is described as the finest timber tree of N.W. America. It was discovered by Douglas, who mistook it for the European species.

Observations on Limpsfield.

UNTIL quite recently nothing was heard in gardening circles about Limpsfield. Its name has, perhaps, never been mentioned in horticultural journals except, possibly, by a casual reference to Titsey Place, the seat of a chief county family—the Leveson Gowers. Lately, however, Limpsfield has come very much to the front, as a site there has been recommended for the establishment of a new experimental garden of the Royal Horticultural Society, in connection with a National School of Horticulture, to be purchased and supported by certain County Councils. It has been twice decided with practical unanimity at general meetings of the Fellows that the old garden at Chiswick is to be relinquished, and a new garden formed in commemoration of the approaching centenary of the Society. As the Society's term of possession expires in twenty years, the governing body has concluded that the sooner a site for a new garden is selected the greater will be the amount derivable by sale of the residue of the present leasehold for building purposes; hence the desire to secure the best obtainable site elsewhere as soon as is consistent with a wise decision.

After attending the special general meeting on April 25th, and hearing there such widely divergent views, especially on the nature of the soil at Limpsfield, three persons decided to visit the site for the purpose of forming an opinion upon it. These self-constituted examiners were Messrs. A. Dean, G. Gordon, and J. Wright. There are some cardinal points that seem to demand consideration in choosing a site for a new national garden—namely: 1, accessibility; 2, climatal considerations; 3, situation and shelter; 4, configuration; 5, soil; 6, water; 7 (in this particular case), a School of Horticulture.

Accessibility.

For practical purposes the "new Chiswick" must be quickly and economically accessible from the seat of government—viz., London. Most Fellows of the Society visit the metropolis periodically, and whether the garden should be twenty or thirty miles east, west, north or south, they would have to do so to reach it, as few quick trains stop at stations within such distances of the terminus. The Limpsfield site can be reached from Victoria in an hour by rail and road, but not by all trains, the special daily cheap train in summer is ten minutes slower.

Climatal Considerations.

The first of these is immunity from smoke-laden fog, not for a few years merely but for a century. For this immunity we must have regard to altitude and surroundings. As to the former the upper part of the site inspected is over 500 feet above sea level, the lower part 300 feet; as to the surroundings, there are on two sides hundreds if not thousands of acres of common land, which can never be built upon, the remainder being purely agricultural land—arable, meadow, and

coppice—a district as "truly rural" as could well be imagined, and miles away from any town. The air is probably as pure as could be found anywhere, while there is nothing to obstruct the full flood of light between Limpsfield Common and the English Channel.

Situation and Shelter.

From an æsthetic point of view it would not be easy to imagine a panorama more beautiful in its way than that which is swept by the eye from the upper portion of the ground over the far reaching and well wooded area of Kent and Sussex—a lovely typical English landscape. But what of the "shelter" which for the purposes of a garden is all-important? With a grand natural elevation along the north, curving partly down the west and tree-clad hills on the east, it is doubtful if anything more complete could be imagined, for it is shelter without shading in the least what it is desired to screen. Except perhaps along a portion of the west side what may be described as the frame of shelter, seems perfect, though possibly intersecting screens might be desirable if the eight fields were transformed into a garden.

Configuration.

Generally the land from the horseshoe-shaped shelter of the northern extremity above indicated slopes somewhat sharply to the south till it reaches a footing of nearly flat fields; but in addition there are a few acres presenting easterly and westerly aspects with easy slopes, or sufficiently so for fruit cultivation. Thus the site, as a whole, is the exact reverse of a "dead level of uniformity," and certainly picturesque effects could, if desired, be produced in the upper portion, while cultivation on the irregular surface and varied aspects would give results of an educational character.

Soil.

It may be stated at once in reference to this almost vital factor in the whole case, that there is plenty of room for differences of opinion. There are two forms of soil on the Limpsfield site—one in which sand preponderates over the clay, as in the upper portion; the other in which clay predominates over the sand on the lower level. A gardener who had experienced a more than ordinary share of backache in working very strong land would prefer the lighter section at Limpsfield; a gardener who had struggled for years against drought, in a dry light medium, would prefer the stronger. In one of the semi-starved fields on the site there is a cogent object lesson. Either some manure has been shot down and lain for awhile, or there has been a rubbish fire. Whatever the fertilising medium, the effect of it is sufficiently striking, for a deeper, richer, and more robust growth of Wheat could be scarcely conceived. The land has not been well farmed, but the reverse, and only requires sound cultivation—tillage and nutriment—to grow better fruit and vegetables than can be grown at "Old Chiswick" by any man.

An ideal soil is supposed to consist of 50 to 70 per cent. silicious and calcareous sand, 20 to 30 per cent. clay, 5 to 10 per cent. pulverised limestone, and the same amount of humus. But where is such land to be found? The sand at Limpsfield is presumably not calcareous. It consists of the washings and drifts from the sandstone on the "heights" above; but there are millions of tons of chalk near the station, and humus can be imparted by natural manure. The soil is improveable; it cracks now in drying, and bakes somewhat, but the cracking is preventable by surface tillage, and the lumps are easily smashed to powder when dealt with at the right time. The upheavals of moles are powdery, and the under soil tested wherever we might, even dug from the bottom of plough furrows, the clay, after some heavy showers, did not in one instance "cake" under compression, but broke into particles, reminding of the lines of Thomas Tusser, written more than 300 years ago:—

All gravel and sand
Is not the best land;
A rotteny mould
Is land worth gould.

How much "gould" this Limpsfield land is worth is for others to determine, but it is understood it was bought by the present owners for between £80 and £90 an acre. As it contains no gravel, and a good deal of it not too much sand, while in texture the strong part is "rotteny," it might perhaps have suited old Tusser.

Water.

As 80 per cent. in bulk and weight of our garden crops consists of water, and some of them a good deal more, not another word is needed to enforce the necessity of a full and constant supply in gardens. True an excess in the soil is injurious, and a few patches of the land in question are no doubt wetter than is good for them. But there is a great *per contra*—a veritable treasure—in the form of what appears to be regarded as an everlasting spring. This is towards the base of the southern declivity, where a pumping station is provided for meeting the demands of the extensive convalescent home of the Charing Cross Hospital above. The overflow passes in a constant stream right through the proposed garden, and meanders away, through copse and meadow, into the distant river Eden. Whoever has control of this stream through the grounds can hold the water up where it might be needed, and by scouring the main outlet below, and rendering

operative choked drains or grown up ditches, can liberate the pent-up water, as required, from most if not all the lower land. This would unquestionably improve it, though doubtless provision would be made for aquatic and bog plants, as could be made most easily. This fine water supply is one of the most valuable features of the property, if the land through which it finds its way as best it can should be converted into a garden. The water courses and fences have been woefully neglected.

The Suggested School.

At the top of the proposed garden is the comparatively new Caxton Convalescent Home, established for the benefit of sick printers. It seems it has not been popular with them, as the "comps" wish to be near the sea. In connection with a well equipped garden it would with additions make a fine School of Horticulture, and it is to be supposed that before purchasing the building the County Councils would satisfy themselves scientifically, through the agency of the professors at the Wye College, that the land which the Royal Horticultural Society has on offer is suitable for the object in view, and this would also be satisfactory to the Fellows. The college, it is presumed, would contribute annually for the educational use of the garden.

It is not in the least to be understood that the foregoing remarks are intended to imply that the Limpsfield site is the best obtainable for a "new Chiswick;" nor are they penned with the object of either combating or supporting any other views, for the visit was planned before other views were published. The observations simply represent the convictions of one who earnestly hopes that no mistake will be made in choosing a site for a "new Chiswick," wherever such site may be.—ONE OF THE TRIO.

I HAVE read with much interest the various reports which have appeared in the *Journal of Horticulture* on the Limpsfield site for the proposed New Chiswick, and, as I presume that before long the Fellows will be asked to decide definitely for or against this site, I shall be very much obliged if you can find room for this letter in your next issue.

Whatever the merits or demerits of this site may be—and to some extent the differences of opinion are doubtless due to the fact that even heavy and wet land looks much more promising in May than it does in winter—the fact remains that it is nearly three miles from a railway station, with bad approaches.

Even supposing the soil were all that is claimed for it, it must be obvious that to transform a heavy arable and pasture farm into a garden, where horticulture of every kind shall be carried on in a manner worthy of our national society, would entail an enormous outlay of capital. In addition to this transformation of arable and pasture land into a garden, houses heated in the most approved manner must be built in which plants of all kinds may be grown; also vinerias, Peach and Fig houses, &c., &c., must be erected and afterwards maintained at an annual cost compared with which the expense of Chiswick is insignificant.

Those who favour the scheme are doubtless prepared to admit all this, but I venture to think that the Fellows generally are unwilling to see all the existing funds applied to such a purpose, together with a further sum vastly exceeding the present resources of the Society, and which can only be raised by voluntary donations. Before sanctioning so great an outlay we ought very closely to understand what advantages would accrue to the Fellows, also what (if any) would be the gain to horticulture generally.

Unless in one garden we have all branches of horticulture carried out on a scale almost regardless of expense, what hope is there that students would be likely to choose the New Chiswick as a school for gardening, rather than avail themselves of the opportunities already afforded by a course of training at Kew, or in gardens such as Frogmore, Sandringham, Gunnersbury, Syon House, and many others; or by employment in Messrs. Rivers', Messrs. Bunyard's, and Messrs. Pearson's nurseries for the culture of fruit under glass or in the open; at Messrs. Veitch's, Messrs. Sanders', Messrs. Bull's, and elsewhere for Orchids, &c.; at Messrs. Paul's, Messrs. Turner's, Messrs. Cant's, and elsewhere for Roses, &c., Messrs. Kelway's for herbaceous plants, &c., &c.

The value of the Chiswick trials of vegetables has already been discussed sufficiently to show that such work is far more completely done in the trial grounds of the large seed houses. What material advantages, then, can result from this vast outlay of capital and money required for the annual up-keep?

But there is another point which the Fellows will readily grasp, and have perhaps already seen—viz., that with the establishment of a new Chiswick at the cost which the Limpsfield site must necessarily entail, all hope of a National Hall of Horticulture disappears, at least so far as the present generation of horticulturists is concerned. If the Society appeals to the country to finance the Limpsfield scheme, it cannot again appeal for funds to acquire a new hall and headquarters of the Society.

Now that it has been shown by so many writers that Chiswick can be made to answer all the actual requirements of the Society so far as

a garden is concerned, the council will earn the most unqualified approval and gratitude of the Fellows were they generously to forego their New Chiswick proposals—at least until such time as it has been proved impossible to raise the money required for a Horticultural Hall.

But the most important factor in the case is that, judging from his letter in last Saturday's "Gardeners' Chronicle," it appears not unreasonable to hope that Baron Schröder may again be willing to lend his aid, which would at once go far to insure the success of any well devised scheme for acquiring a new hall. If the Baron's letter may bear this interpretation, can we sanction a scheme which would deprive the Society and horticulture generally of what is universally admitted to be the fittest way of celebrating the centenary of the Royal Horticultural Society?

The thanks of all horticulturists are due to Baron Schröder for coming forward at a time when his counsel and support were never more welcome.—ARTHUR W. SUTTON.

Notes on Figs.

THE first crop fruit of early forced trees in pots has, or soon will have, all been gathered, when the loose portion of previous mulching should be removed and a fresh supply of well decomposed manure or rich compost applied, which will encourage root action and aid the trees to perfect the second crop. In this they may be assisted by top-dressings of chemical manure, applying a little over the mulching at intervals of a fortnight or three weeks. If the trees have become infested with red spider or scale thoroughly cleanse them by means of an insecticide and a stiffish brush. The syringe should be used freely twice a day to keep red spider in subjection, always using clear soft water, as that containing lime or iron is liable to cause a deposit on the fruit that greatly detracts from the appearance. Water and liquid manure will be required liberally at the roots, not allowing them to lack moisture or giving it excessively, yet the supplies must be adequate and well sustained. It is advisable to leave the second crop fruit low down on the growths, and keep the points of the shoots free and well exposed to light.

Planted-out trees started at the new year have the first crop Figs ripening. Syringing in such case must cease, and a superabundance of water or moisture about the house be avoided. A little air admitted constantly at the top of the house, and continued until the fruit is perfected, with a free circulation of warm air whenever the weather is favourable, is necessary for good finish and high quality. The trees, however, must not lack water at the roots, as this prejudices the health of the foliage and the second crop fruit, therefore supply water to the border when the fruit commences to ripen, especially where the trees are large and the root space limited. The fruit should be kept perfectly dry, well exposed, with its apex as far as possible to the light, and be quite ripe before gathering, unless it is to be packed, when it must be gathered a day or two sooner.

Successional Fig houses require attention betimes in stopping the young shoots at the fifth or sixth leaf to induce a sturdy habit and growths at the right place and proper length for furnishing the trees with bearing wood evenly in every part. Crowding, however, must be avoided by removing growths that cannot have ample room for development and exposure of the foliage to light and air, rubbing off such shoots early. When the growths are sturdy and short-jointed, the terminals or extending shoots should not be stopped, and only a judicious number of the side shoots be pinched to form spurs.

Strong-growing and long-jointed sappy wood is best removed, but if the trees produce much of that they ought to be marked for lifting and root-pruning, or they may have the growth checked by taking out a trench down to the drainage, cutting the roots at about one-third the distance from the stem the branches cover of trellis. This will give a sudden check, and the trees respond by concentrating their forces on reproduction, and are aided in developing the fruit by the fibrous root action induced. Do not give so severe a check as to cause the leaves to fall, but when done judiciously summer root-pruning is better than winter, as a year is gained. Attend to syringing the trees twice daily, and water abundantly at the roots as often as required, employing weak liquid manure, especially where the borders are small.—GROWER.

BACTERIA.—A magazine devoted to scientific topics, sagely remarks that the bacterium has something else to do in the economy of Nature than in originating maladies. It continues the topic by noting a paper in a French magazine by M. Matruchot, on the agency of bacteria in forming the colours of flowers. It is something to check the microbean craze of the popular press in regard to the supposed viciousness of these humble vegetable organisms. It is true, says Mr. Meehan, that they are operating in innumerable directions—but the number that are associated with disease are very few—and even these few, if the animal be healthy, are digested by the gastric juice as easily as would be an oyster. The majority, indeed, are essential to our health and happiness.

Sweet Pea Bicentenary Celebration.

SELDOM, if ever, has a proposed exhibition of a special flower received such general support as that of the Sweet Pea, to be held on July 20th and 21st next. At the present time, about two months ahead of the exhibition and conference, financial matters are in a most satisfactory condition, while the applications for schedules serve to indicate the widespread interest that is being taken in this popular flower and its exhibition. On Friday, the 11th inst., the Executive Committee met at the Horticultural Club, Hotel Windsor, Mr. G. Gordon, V.M.H., presiding, when it was reported by the hon. sec., Mr. Richard Dean, V.M.H., that the whole of the north nave of the Crystal Palace would be devoted to the forthcoming exhibition, and that a suitable room would be provided for the conference proceedings. The trade displays will form a border around the competitive exhibits, and these latter will be relieved by tables of plants. One great improvement promised is that the tables will be draped with green baize, and consequently there will be no unsightly array of boxes and other impedimenta below the flowers.

In connection with the conference, arrangements were made for papers to be read as follows:—"The History of the Sweet Pea," by Mr. S. B. Dicks; "The Evolution and Improvement of the Sweet Pea," by Messrs. J. Eckford and C. H. Curtis; "Classification of Sweet Peas," by Mr. W. P. Wright; "Sweet Peas in America," by the Rev. W. S. Hutchins; and "Some New Points in the Cultivation and Decorative Use of the Sweet Pea," by Mr. H. Dunkin. Fifteen judges, including three ladies, were selected for the competitive exhibits, and it was decided the Exhibition Committee should judge the trade exhibits. Applications for space must be made to Mr. R. Dean, Ranelagh Road, Ealing, as the entire arrangements for the show are in the hands of the committee. Intending exhibitors and others will be interested to learn that a cold luncheon will be provided at the Crystal Palace on July 20th, tickets 5s. each, including wine. Breakfasts will be provided earlier in the day at 1s 6d. per head.

With a view to securing as large an attendance as possible the executive committee is calling a general committee meeting for four o'clock on Thursday, May 24th (the second day of the Temple Show), at Anderton's Hotel, Fleet Street. It is hoped that all committeemen in town will make a special effort to attend and receive the report of the executive body.

Flowering Trees and Shrubs.

BEAUTIFUL as are the several flowering trees, with many others, to which brief allusion was made on page 376, the shrubs that are grown for the attractiveness of their flowers are even more popular. This arises from two facts; 1, the greater diversity of flower and habit, and 2, the greater utility of these smaller growing plants. There are few if any places so completely stocked that it would be impossible to find room for a number of shrubs, whereas with flowering trees the matter is different. Many of the latter do not attain to sufficient size to be decidedly ornamental for some years after planting, while shrubs are immediately effective if they are employed judiciously. So wide is the selection, and so different are the characteristics of the plants that can be drawn within the category of flowering shrubs, that a thoroughly complete and yet representative choice is well nigh impossible, but a few may be referred as standing absolutely in the front rank for general utility.

Taking into consideration that we are now in the month of May the place of honour must be given to Rhododendrons, for these are essentially flowers of May. In every garden they are represented, but in varying degrees. In some places they are grown to form complete gardens with the nearly related Azaleas; while in other estates one finds immense banks of them bordering sweeping lawns of soft, green turf. For such positions as the latter it is of course necessary that the lawns be of considerable extent, or they will appear overwhelmed by the gorgeousness of the shrubs that flank them. Generally speaking the commoner varieties are used for banks, but where what are usually termed American gardens are contemplated the vastly improved newer forms ought to be chosen. To enumerate the best varieties is beyond the scope of general notes such as these, but planters may safely leave the selection in the hands of some of our first-class nurserymen who keep their stocks right up to date in all respects. Rhododendrons are, of course, employed to an enormous extent, but more Azaleas might advantageously be planted, as they have a beauty and grace that cannot be excelled by any other kind of flowering shrubs. With these a more careful selection is requisite, as some are much hardier than others, and the tenderer ones must

obviously have the most favoured situations as regards shelter from keen frosts and biting winds.

The Ribes or Flowering Currants make a really charming display in the later spring months, and they are quite indispensable in borders or beds of shrubs. Individual specimens of the older forms are not particularly attractive, as the colours are inclined to be "washy," but the newer varieties, such as *atrosanguineum*, are splendid, either planted singly, or what is unquestionably preferable, in clumps. *R. aureum* on a wall is singularly pretty at the end of April, but with me it has not proved satisfactory in the open, though possibly it might be so in more favoured positions. Of *Garrya elliptica* I have nothing to add to my note on page 395, and I am waiting with much interest the views of other contributors to the *Journal of Horticulture* as to its hardiness; certainly if it will succeed in the open it should be grown as well for its handsome leafage as for its catkins.

Where is the garden without its share of Lilacs? Such a one would, I venture to affirm, be very difficult to find. This is as it should be, for amongst the several varieties we have now a wide range of colouration, and fortunately the majority of them are deliciously fragrant. Some, of course, are sweeter than others, but one can hardly go far astray. In gardens where flowering shrubs are cherished the Weigelas are almost invariably accorded a conspicuous position, as their distinctive beauty is acknowledged and appreciated. Yet there are gardens in which Weigelas are represented by perhaps one or two miserable specimens, that are barely worthy the name of plants. In the grounds of Gunnersbury House, and also of Battle Abbey, there are some of the finest specimens of Weigelas that it has ever been my lot to see. In each of these places the branches are simply loaded with flowers, which hang down with the weight of their charming burden. A really good form of *W. rosea* is very hard to excel, especially when the colour becomes so intense as it does in some soils and situations. *W. alba* is also peculiarly well adapted for certain positions in the borders.

Differing in every respect from either of those that have been enumerated are the Brooms, of which again the selection is wide. For certain positions on banks the Spanish Broom is absolutely unrivalled, and I have in my mind at the moment of writing a bank at Lockinge that is simply gorgeous when the plants are flowering. Personally, I know no place where the Spanish Broom has been utilised to greater advantage. There are other Brooms differing in colour from the Spanish, and perhaps not quite so showy; but, at the same time, they are of the utmost value for certain positions. Some of the forms of Gorse, too, must not be despised, as they are distinct from all other shrubs, and will luxuriate where the majority of plants would do no more than eke out a wretched existence. Then, again, we must in justice place in the forefront of flowering shrubs the Berberis, which in several species and varieties is really superb. There was a time when *B. Darwini* was the prime favourite, but now it must take second position to *B. stenophylla*, which as a flowering shrub is absolutely perfect. The long arching branches clothed in bright yellow inflorescences produce a unique effect, and one which never fails to attract close attention and elicit expressions of admiration. This plant is admirably employed in the gardens of Syon House, where full advantage has been taken of its striking individuality.

There is certainly no garden from which the Mock Oranges (*Philadelphus*) can be excluded; they produce, especially when such varieties as *P. Gordonianus* is employed, a grand display, and, fortunately for shrub lovers, one which cannot be provided by any other plant. The wanderer from garden to garden comes across many instances of their value for ornamentation, but, so far as I have seen, the specimens in the drive of Summersbury Lodge, near Guildford, would be difficult to excel. This, so far as my experience goes, is not a particularly satisfactory town plant, but I have only tried it under the most unfavourable conditions with respect of fogs and smoke, so that too condemnatory terms would not be justifiable. Who does not grow in town and country the fragrant *Mezereon*, or to apply to it the botanical name *Daphne mezereum*? It may not be showy when compared with others that have been enumerated, but it has a modest charm that enchains attention and insures the admiration of almost everyone. Add to this a most pleasing perfume, and no one can marvel for one moment at the plant's popularity. It is a shrub as well for the cottager's garden as for the princely estate, and thrives alike in both.

Amongst shrubby plants that might be more freely planted in gardens are several of the *Spiræas*, which are decidedly handsome. In



Fig. 114.—WEIGELAS ROSEA AND ALBA.

the gardens of Swanmore House there is a magnificent example of *Spiraea* (*Exochorda*) *grandiflora* that forms a lovely picture when in full bloom. In addition to this there are others, which, if not possessed of such striking beauty are undoubtedly deserving of inclusion in all well appointed pleasure gardens. But how can the list be completed? There is such a galaxy of beauty that several articles would have to be written ere all could find a place. In brief, however, may be noted *Cydonia* (*Pyrus*) *japonica*, *Andromeda speciosa* and its varieties, the *Forsythias*, *Kerria japonica* fl.-pl., *Buddlea globosa*, the *Deutzias* in variety, which, though they may not be indispensable, are at any rate most desirable adjuncts to every garden in the kingdom.—F. ROWE.

[*Weigela rosea* and *alba* are depicted in fig. 114, but our artist has by no means done justice to their beauty.]

The Young Gardeners' Domain.

Bits for the Bothy.

(Concluded from page 316.)

As the time approaches for bidding farewell to bothy life, most young men, probably, take more serious views of things in general, and their own prospective positions in particular. All right thinking ones will certainly do so. There is, and it goes without saying, much anxiety about the future, but there should be something more than that, and ere the final plunge into responsibility is made a self-searching glance into the mirror of truth may possibly prevent false reflections arising hereafter. It has been the endeavour to impress through the whole course of bothy life the value of personal inspection and mental stocktaking, but never before has occasion appeared to demand so exacting a survey as now. Perhaps some reader can picture life—a gardener's life—as one bound up in three volumes, the first of which is nearly finished—all but closed. Opened hereafter it may be, altered it cannot. Oh! Young comrades, the youngest of you just commencing the early chapters, ere concluding, you are asked to consider how much this means to you. I would that in the years to come, when the silence and the calm of life's evening are stealing on, this first volume should be to you very pleasant reading.

Many a smart foreman feels, doubtless, quite equal to the charge of a garden similar to that in which he as yet holds a subordinate position. It is a natural sequence of circumstances that he should do so. Nevertheless he may very probably have to begin his rule in a much smaller one, and one apparently below the par of his ability and experience. This so frequently happens that it would be well for all at this stage to take the matter into serious contemplation; for, anomalous as it may appear, a young man may be less inclined to do himself justice in the small place which circumstances have forced upon him than in a more extended sphere of operations. In short, a measure of contumely springs up for the situation which he considers to be beneath him. In any case the first command of whatever degree may well be regarded by the young head as a trial ground from which proofs are expected of what he professes. As many must start in a small garden or protract their stay in bothydom longer than may be expedient, there should be some consolation to them in reflecting that from such comparatively obscure situations some of the leading places of the day have been filled by men who, under apparently adverse circumstances, have contrived to find or create the opportunity of showing their worthiness of being thus elevated.

All things come to those who wait, if they will work whilst waiting instead of dissipating their energy and discounting their ability in half-hearted measures and vain regrets. Eventually the fittest come to the front, and the fittest stop here. That we live in a practical age is shown by the practical way in which some of the best posts are being filled, and, although few young men may agree with the writer, the opinion has long since obtained that these low grade gardens, if the term may be used, are fine finishing schools for young commanders. There are little things in bothy life which during that term are possibly small enough to be overlooked, or only thought of to be despised, but at the critical stage of leaving it are of sufficient weight to turn the scale in a man's favour when competing for a situation. Competing, it is said, for in spite of many situations being filled privately, over the dinner table as some have remarked, it cannot be overlooked that a quiescent kind of competition has taken place, and the selected one has been pretty keenly criticised, and comparisons made although unknown to himself.

So far as ability and general good character go there may be nothing wanting. Some young men, however, show a magnificent contempt for the little refinements of speech and manner, and will bravely tell you that by their abilities as a gardener they stand or fall. This is so. But how much easier a man is fitted into a higher position, and how much better he fits it when these little angularities of character, which strike the eye and ear of cultured people with whom from henceforth his duties keep him in touch, are pruned away. The

worst examples are those in which a consciousness of these failings brings an awkward constraint, placing one who may be an excellent gardener and a good man in his worst light. This should not be. Surely a man who takes such infinite pains with his plants to exemplify in them the highest possible cultivation, does not do justice to himself by totally disregarding the amenities of life. Is a man less than a plant that he should ignore his finer instincts?

It is sincerely hoped that our foreman long ere leaving the bothy will be impressed with the force of this personal cultivation and the weight it undoubtedly carries when he is leaving it. A notable characteristic of some of those grand old gardeners of the past was a certain refinement and courtliness of manner which one seldom meets with in the hurry and crush of later days. Men, manners, and methods have changed with the times, but as gardening is steadily growing into a factor of the first importance in the world's economy and will ever remain the purest of human pleasures, so should it be the endeavour of each ministering hand and responsible head to elevate their vocation to the position it is justly entitled to. Never was gardening, itself, more highly esteemed than it is to-day, but it is a fact that gardeners, somehow, are not as a class recognised in ratio to work which demands such high intelligence, elaborate forethought, and unremitting attention. The reason for this may be to some extent inexplicable, yet not wholly so, for "our remedies oft in ourselves do lie which we ascribe to heaven." That each young foreman as he is called to the front may go forth strong with faith in his future, firmly believing that he can, if he chooses, be a unit of power in the ever-spreading gardening world of the great British Empire, is the earnest hope of—THE OLD BRIGADIER.



Fruit Forcing.

Vines.—*Early Forced Houses.*—Where the Grapes are ripe, afford fire heat only to prevent the temperature falling below 60°. Admit a little air constantly, with a free circulation when the weather is favourable. Do not allow the border to become dry, but keep it moist, and mulch with rather dry, sweet litter, both to prevent excess of air-moisture and keep the soil from cracking. A little moisture in the atmosphere is not injurious to the Grapes, and is highly beneficial to the foliage, which must be kept clean and healthy. Fumigation may be resorted to if thrips appear, repeating in the course of a few days. For red spider there is no better plan than vaporisation with sulphur placed in water, not allowing the receptacle to become dry. Even sulphur placed in shallow saucers and covered with water or kept moist in the full sun, as on shelves near the glass, gives off fumes inimical to red spider and prejudicial to fungoid germs.

Successional Vineries.—As little fire heat as is consistent with the steady progress of the crops should be employed, for with sun heat and abundance of atmospheric moisture more real benefit is gained in a week than in a month with the aid of fires during dull weather. The Vines being in full growth the temperature may be allowed to rise to 90° to 95°, closing the house at 85°, employing fire heat only to maintain a day temperature of 70° to 75°, and to prevent it falling below 65° at night, yet 5° less will do no harm but good when the weather is cold. These remarks apply only to Vines in full growth and swelling their crops, as those that have the Grapes approaching ripening should have a rather free circulation of air, those more advanced being kept cooler and drier. Air should be admitted very early in the morning, as the sun's rays acting powerfully on the condensed moisture formed on the foliage during the night usually cause scorching, unless air has been previously admitted.

Watering the borders must be attended to as required, not having stated times. Some loams are naturally very loose, sandy, or gravelly, while others have opening material added, such as lime rubbish, oyster-shells (calcined) and charcoal, which makes them sieve-like. The consequence is the greater need of water, besides the danger attending the finish of Grapes grown on such soils through insufficient supplies of water leading to attacks of red spider, and thin foliage, which does not assimilate and store nearly as much essential matter as the stout leaves on Vines in a firm substantial soil of a rather retentive nature. Such soil will require water less frequently, but in no case must there be lack of moisture at the roots throughout the swelling periods.

Liquid nourishment is also more frequently required by loose and light soils than by compact and retentive ones. All will need top-dressings of some approved fertiliser, three times at least being advisable—1, When starting the Vines; 2, when the Grapes attain to thinning size; and 3, when the berries commence to ripen, supplying 4 ozs. per square yard at each dressing and washing in lightly. If more stimulation or support be needed, supply the manure oftener; this is

better than increasing the quantity each time and at long intervals. A light mulch is of great advantage in keeping the soil uniformly moist at the surface and supplying nourishment. Cow manure is best for light porous soils, and horse droppings are excellent for those of medium and retentive natures. Both are better sweetened, that is, not used quite fresh, but thrown into a heap and turned a time or two as if preparing for a Mushroom bed, and heavy mulching should be avoided, an inch thickness sufficing, adding to it from time to time so as to maintain that depth or very little more. This will not deprive the soil of the essential atmospheric air, especially if the material be used, as it should be, in a rather lumpy state.

Late Houses.—In some places the work now on hand in thinning the berries is considerable, and will continue for some weeks, as in many instances the Vines are only in flower. In the latter case maintain a minimum temperature of 65° to 70°, 5° more for Muscats, shaking the Vine twice a day to distribute the pollen, which will be sufficient for all but the shy setters, and these ought to be artificially fertilised, going over the bunches carefully with a camel's-hair brush, and supplying pollen where it is deficient from those varieties that afford it freely. All the large berried and free-setting varieties, such as Gros Colman and Gros Guillaume, should be thinned whilst they are in flower, or as soon as set, and with those that are liable to have closely set berries it is advisable to thin before the flowers expand, as a practised eye can tell which flower will set by its vigour, and the removal of the weaker strengthens those left wonderfully. While the Vines are in flower moderate moisture, with a rather free circulation of warm air, is desirable. It is also inadvisable to stop or remove laterals while the Vines are in bloom, but when the berries are fairly set remove superfluous laterals and pinch as required, both to prevent overcrowding and concentrate the supplies of nourishment on the Grapes.

Planting Growing Vines.—From now to the early part of June is a good time to plant out those raised from eyes in February or March and grown in pots or turves. The roots need not be disentangled, yet turf-raised Vines are better than potted ones, as they form a straight yet fibrous root, and are not so prone to descend deeply as those turned out of the pots with the ball entire. Firm the soil well about the balls or turves, giving a good but not excessive watering with water at 90°, and mulch with about an inch of short and rather lumpy manure. Maintain a rather humid atmosphere, and shade from bright sun until the Vines become established.

Strawberries in Pots.—There must be no lack of moisture at the roots of Strawberries, as when the sun is powerful the fruits are apt to have the skin dried, and they do not swell properly afterwards; the fruits are also better for a slight shade from the fierce rays of the sun. After the fruits commence swelling a brisk moist heat is essential, applying liquid manure liberally until the fruits change colour, when it must be discontinued, giving less water at the roots. Admit air freely whenever the weather is favourable, avoiding drying currents. Thin the fruits well on late plants, especially the late varieties. Water the plants twice a day, and in bright weather three times at least. Liquid manure may be given at the afternoon watering.

The Kitchen Garden.

Artichokes.—Globe Artichokes have developed sucker growths far more than are wanted this season. If all are allowed to remain none will be strong, and a short crop of small flower heads be the result, whereas if the growths are reduced to about three in each group these will grow strongly, branch freely, and develop a long succession of large succulent heads. Feed the older plants freely, supplementing occasionally with soakings of liquid manure and a heavy mulching of strawy manure. Young plants recently separated from old stools and carefully planted on heavily manured deeply cultivated ground should be kept well supplied with water at the roots during dry hot weather, and they ought then to produce a few acceptable, because late, flower heads. Seedlings raised under glass and still in 5-inch pots, should be quickly hardened and planted out 2 feet apart in rows 3 feet asunder, on well manured deeply cultivated ground.

Beet.—Birds are very destructive among the young plants this season. Where this trouble is experienced late thinning is desirable, and if occasional dusting with soot and lime while the leaves are damp in the morning will not deter the birds, a single line of black cotton should be stretched just over the rows. More seeds of a selected variety sown at this late date may result in the production of a serviceable crop. Where birds are not troublesome early thinning of plants should be resorted to, not waiting till they have already weakened each other. Medium sized roots can be had by leaving the plants not more than 8 inches apart. The Turnip-rooted type will transplant readily.

Carrots.—The seeds of these in common with various other vegetables have germinated well, and where sown thickly much thinning will be necessary. This can be most expeditiously done while the plants are small. The Horn variety need only be thinned to 2 inches apart, drawing more when the roots are large enough for use, ultimately leaving those reserved about 4 inches asunder. The intermediate and long rooted types should be thinned more severely directly they are large enough.

Onions.—In gardens near to towns, and also farm buildings, sparrows have cleared off the plants wholesale. A single line of black cotton,

as advised in the case of Beet, seems the only remedy. Where there is no such interference the thinning should take place when they are quite small, or when they can be drawn with the least amount of disturbance to those left. If 12 inches or so are allowed between the rows a serviceable crop of roots can be had by thinning to about 4 inches apart, allowing an additional 2 inches if large roots are desired. A light surfacing of soot is an excellent dressing for Onions, applying this and stirring it in when rain is expected.

Parsnips.—For large roots of these there is little demand, the smaller and more acceptable class of roots being obtained by sowing somewhat late (April), and by lightly thinning those rows that were sown much earlier. Do all necessary thinning early, leaving the plants about 8 inches apart, while 12 inches is none too much space if exhibition roots are wanted.

Turnips.—The strap-leaved varieties, including Early Milan, do not form large leaves. These should be thinned early to 6 inches apart, drawing the roots later as fast as required, or when near the size of overgrown Radishes. The stronger growing Snowball type should be thinned to 12 inches apart, or they may fail to "bulb" properly.

Hoeing Among Crops.—Directly the rows of seedling plants are well defined hoeing between them should commence. It is not merely a question of getting rid of weeds, but the ground ought to be frequently stirred with Dutch hoes, this keeping it loose and open, also destroying all advancing weeds.

THE BEE-KEEPER.

Seasonable Notes.

It is several years since there was such an abundance of bloom, not only on the fruit trees, but also on the different hardy trees on which the bees work. The Plums are now nearly over, and thanks to the bees fertilising and the fine weather which prevailed whilst they were in bloom they appear to have set well. True there have been frosty nights and high winds, but in this district (South York hire) it has not seriously affected them. The next fortnight will decide the question whether an abundance of fruit will follow; so far the prospects are decidedly good.

Apricots have set remarkably well, bees having played an important part in fertilising the blossoms. The result is, they must be severely thinned if fine fruit is expected. If gardeners would realise how beneficial bees are in the fertilisation of their fruit trees, there would not be a garden in the country without a stock or two of bees. Gooseberries and Currants are also well set, and as the former are now well in leaf they will withstand several degrees of frost without any harm happening to them. This is the great advantage that Whipham's Industry has over other varieties, as it bursts into leaf as soon as the flowers are opening, which protects the blossoms from frost.

There are not many stocks in the country strong enough to store a surplus from the fruit blossoms. It is not only from the fruit trees that bees obtain their stores at this season, the meadows and woods are carpeted with flowers, many of them yielding an abundance of pollen. One has only to observe the bees as they return laden to their hives with the pellets of different coloured pollen on their legs to realise how numerous the flowers are on which they work.

We have mentioned in previous notes the advantage bee-keepers derive from planting the different varieties of Willows near the apiary. They all yield an abundance of pollen, and at the present time the bees are working more freely on them than on any other non-fruiting tree. The Sycamore and Wild Cherry, of which there are numerous trees near our apiary, are much frequented by the bees on account of the honey and pollen they produce. The former yield an abundance of honey of poor flavour. It is, however, not stored in quantity, as the bees are increasing in strength every day, and thus require an abundance of stores. Extra combs or frames of full sheets of foundation should be given to colonies that are crowded with bees.—AN ENGLISH BEE-KEEPER.

Gardeners' Charitable and Provident Institutions

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.



- All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Vine Leaves (Inquirer).—We could not find any of the insects referred to in your letter on the under side of the Vine leaves, they being so fragile, if any were present when the leaves were packed, as to have completely disappeared in transit. With the exception of some slight eating of the leaves, or damage to the tissue by a bruise, there was nothing the matter with them, they being quite healthy and free from pests. On the Vines there were examples of the common "springtails," which are usually somewhat abundant where there is vegetable or animal matter in a state of decay, and even in damp earth. They are sometimes a trouble in houses, rasping the stems of young Cucumber plants. They are readily destroyed by dusting the soil with quicklime, or water at 110° to 120° may be used, a light sprinkling sufficing.

Vine Leaves Rusted (W. C.).—The leaves are simply rusted, there being no evidence of malignant vegetable or animal organisms. The rust or small excrescences on the under side of the leaves have been caused by keeping the house somewhat close, and then admitting air in such amount as to suddenly provoke evaporation from the foliage. The parts affected perform their offices very imperfectly, and sometimes cause the leaves to assume a sickly and diseased appearance, and interfere, though not generally materially, with the elaborating and assimilating functions. There is also some scorching, certainly due to neglect of ventilating before the sun had acted powerfully upon the house, and the leaves are very thin in tissue. We can only suggest earlier and more judicious ventilation, the night temperature being kept at 60° to 65°, and 70° to 75° by day, increasing to 80°, 85° or 90° with sun heat, air being admitted between 70° and 75°, and the ventilation correspondingly increased with the advancing temperature, and never given so as to lower it.

Melon Plants Collapsing (T. M.).—The roots of the specimen appear quite sound and free from pests, but at the collar there was a slight enlargement, with small light coloured excrescences. The stem immediately above the collar was somewhat contracted, and on this part were small pustules. We have long been acquainted with this affection, which is akin to browning or "branure" in Vines. The slight enlargement on the root stem just within the soil yielded both a specimen of root stem eelworm, *Tylenchus obtusus*, and the mycelial hyphæ of a fungus, possibly that of the Kidney Bean rust, *Glaeosporium Lindemuthianum*, the small pustules on the stem just above ground being apparently due to this parasite, though no fructifying bodies were observable. Possibly the fungus passes up the stem as plasma, and is thus apt to be confounded with the browning organism, *Pseudocommis Vitis*; but whether one or the other, or both, the effect is to stop the ascent of the sap at the nodes of the leaves, which collapse. The disease has become very prevalent of late years, especially in Cucumbers grown for market, the conditions of culture adopted being highly favourable to pests. The disease receives considerable check from dressings of a mixture of air-slaked lime and soot in equal parts by measure, it being sprinkled on the surface of the soil at the rate of a good handful to the square yard, repeating occasionally. Lime applied to the soil is useful as a preventive, and in the early stages of attack Little's soluble phenyle, 1 in 1000, or a fluid oz. to 6½ gallons of water, has given good results.

Black Spots on Clerodendron Leaves (Idem).—The black pustules on the under side of the leaves are those of some unrecognised species of *Phragmidium*. The only remedy is to remove and destroy the worst infested leaves and spray the whole plant with methylated spirit diluted to a safe strength, which must be ascertained by experiment. Petroleum emulsion may also be used in a similar manner, or any of the advertised fungicides in accordance with the instructions.

Sweet Peas Defective (J. O. H.).—The seeds are very indifferent, only the larger ones being perfect; the others, more than half, are not only very small, but devoid, in the specimens examined, of embryos or young plants, consequently they cannot grow. There, however, was no trace of disease, the seeds being simply imperfect, possibly due to ineffective fertilisation. Only the good seed will grow, hence the seeds sown will not come up properly in relation to the number placed in the soil. The seeds do not appear too old for germination, though that is a matter for testing.

Non-setting of Tomatoes (J. C. A.).—The chief cause of Tomatoes not setting their fruit is excessive vigour, combined with a too close and moist atmosphere, the plants not having enough air, and possibly light. Artificial and even cross-fertilisation may be useful in some cases, also rapping the footstalks of the flowers on the trusses when the blooms are fully expanded to liberate the pollen, but unless this be perfect, also the pistillate organs, there can be no good result ensue by any of the three processes. We do not see in what way the water could affect the blossom and setting of the fruit, though it may be largely impregnated with or contain organic matter, which would probably be corrected by adding sulphate of lime or gypsum to it, about an ounce per gallon counteracting the tendency to an excess of organic acids and their consequent causticity. Caustic soda, 98 per cent. purity, may be procured of any chemist to order, there not being any necessity to use the term "Greenbank" in this country.

Covering Bank at Tennis Lawn (F. R.).—The position and height of the bank is such that there are few suitable plants. Nothing would answer your purpose as well as a rather rapid growing Stonecrop. Of these perhaps the best would be *Sedum spurium coccineum*, which would form a dense carpet of green, with crimson-purple flowers in June and July. It is so dense that the balls would be readily seen. The ordinary variety has blooms, too, like the colour of the balls. Even brighter would be *Sedum reflexum*, with showy yellow flowers. These are, however, more elevated above the foliage, and might hide a ball thrown with some force. Either would soon cover the bank if planted a few inches between each plant. It would need practically no attention, while *S. reflexum* would require to have the blooms cut off after they were over. Either would hold up the soil of the bank. *S. reflexum* would look better in or out of bloom than *S. spurium coccineum*, but the latter is easier to keep in order. Other capital plants are unsuitable on account of their hiding the balls. *Helianthemum*s would make a delightful bank, but the blooms are usually past early in the day. *Hypericum calycinum* is good, but would hide the balls.

Pear Tree Leaves Blistered (P. J. P.).—The leaves are infested by the Pear-leaf mite, *Phytoptis pyri*, which causes red blister-like spots to appear on the upper surface before the leaves are fully expanded, and later on they change to yellowish green, then to a dark brown colour, presenting finally a dead, dry, brown or black, corky appearance. The spots occur either singly, scattered over the surface of the leaves, or coalesce, forming large blotches which sometimes involve a considerable portion of the leaf. The mites live in galls set up by the deposition of eggs in the tissues in the spring. Spraying or syringing the trees with a solution of petroleum emulsion has a good effect, repeating occasionally from early spring up to the middle of July, the mites infesting the young leaves as produced. Any badly infested leaves or points of young shoots that can be spared may be removed and burnt, but it is not wise to defoliate the tree or trees to an excessive extent. The spraying or syringing should be practised about every fortnight or three weeks, with 2 ozs. of the emulsion, usually called petroleum, or paraffin softsoap, to a gallon of water. The pest may usually be prevented by a single spraying of the trees in winter with petroleum emulsion diluted with seven parts of water, it being important to apply the solution thoroughly and whilst the trees are dormant.

Beetles in a Vinery (Idem).—The insects are the grooved or black Vine weevil, *Otiorhynchus sulcatus*, which is very destructive, both as beetles and as larvæ or grubs. The beetles feed on the young shoots of Vines, Peaches, Apricots, and other choice fruit trees; and are particularly fond of the young fronds of *Adiantums* and many other Ferns. The larvæ are usually most injurious to the fleshy or young roots of Vines, Raspberries and Strawberries, and frequently do great harm to potted plants in greenhouses, especially to *Cyclamens*, as well as to the roots of a great variety of plants in gardens. The beetles feed at night, when they should be sought for and destroyed, but they fall very readily off their food plants when these are shaken, or when a light is brought into their vicinity; hence it is advisable to lay cloths or papers, or to invert an open umbrella in the daytime beneath, and at night shake the plants; then collect the beetles without delay, as they sham death for a short time only, and place in a vessel containing hot water or a little paraffin oil. This practice persisted in will greatly reduce their number, if not clear them.

Book on Orchids (H. W.).—It would have been much easier to answer your question had you given some indication of the price you were prepared to pay for the book. "Williams' Orchid Manual," price 25s., is a standard work, and may be obtained from Messrs. B. S. Williams & Son, Upper Holloway. In a more popular style, and at a lower price (about 3s.), you will find "Orchid Growing for Amateurs," by Mr. H. A. Burberry, late Orchid grower to the Rt. Hon. Jos. Chamberlain, excellent. The cultural details in this book are the result of many years' practical experience, and are thoroughly reliable. The publishers are Messrs. Blake & Mackenzie, School Lane, Liverpool.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (G. H.).—1, A fairly good form of *Cypripedium barbatum* much resembling *C. b. biflorum*; 2, *C. b. Crossi*, true. (T. A. J.).—1, *Spiraea japonica*; 2, Rose Harrison's Yellow; 3, *Deutzia gracilis*; 4, *Fritillaria Imperialis*; 5, *F. Imperialis* var.; 6, *Cydonia (Pyrus) japonica*. (W. W. B.).—1, *Prunus (Cerasus) Padus*; 2, *P. nana*; 3, *Genista racemosus*; 4, *Phlox setacea*; 5, *Lycium europæum*. (K. S.).—1, *Berberis Darwini*; 2, *Doronicum plantagineum* var.; 3, *Magnolia Soulangeana*; 4, *Berberis stenophylla*.

Covent Garden Market.—May 16th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, sieve ...	5 0	10 0	Grapes, black ...	2 0	to 4 0
" Californian, case ...	8 0	14 0	Lemons, case ...	4 0	15 0
" Nova Scotian, barrel ...	15 0	22 0	Oranges, per case ...	5 0	15 0
" Tasmanian ...	8 0	18 0	" Californian, seedless ...	16 0	24 0
Apricots, per box ...	1 6	0 0	Pears, Californian, case ...	6 0	12 0
Cherries, per box ...	1 6	0 0	Pines, St. Michael's, each ...	1 0	6 0
Cobnuts per 100 lb. ...	80 0	90 0	Strawberries, lb. ...	3 0	6 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 3 0	Mushrooms, lb. ...	0 8	to 0 10
Asparagus, green, bundle ...	0 9	3 0	Mustard and Cress, punnet ...	0 2	0 0
" giant, bundle ...	4 0	6 0	Onions, bag, about 1 cwt. ...	7 0	9 0
Beans, Broad, per flat ...	3 0	4 0	" Egyptian, cwt. ...	8 0	0 0
" Jersey, per lb. ...	1 0	0 0	Parsley, doz. bunches ...	2 0	4 0
" Madeira, basket ...	2 6	3 6	Peas, Jersey, lb. ...	0 9	1 0
Beet, Red, doz. ...	0 6	0 0	" French, per pad ...	2 6	3 6
Cabbages, per tally ...	5 0	6 0	Potatoes, cwt. ...	3 6	6 0
Carrots, doz. ...	3 0	4 0	" new Jersey, lb. ...	0 2	0 5
" new, bunch ...	0 3	0 4	" Teneriffe, cwt. ...	18 0	28 0
Cauliflowers, doz. ...	1 6	3 0	Radishes, long, doz. ...	0 6	0 0
Celery, bundle ...	1 0	1 9	" round, doz. ...	1 0	0 0
Cucumbers, doz. ...	2 0	4 0	Seakale, doz. baskets ...	4 0	7 0
Endive, doz. ...	1 6	2 0	Shallots, lb. ...	0 8	0 0
Herbs, bunch ...	0 2	0 0	Spinach, bushel ...	2 0	3 0
Leeks, bunch ...	0 3	0 0	Tomatoes, doz. lbs. ...	4 6	5 6
Lettuce, doz. ...	0 10	1 2	Turnips, bunch ...	3 0	4 0
" Cos, doz. ...	2 0	3 0	" new ...	0 5	0 7
Mint, green, doz. bunches ...	3 0	6 0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2 0	to 3 0	Mignonette, doz. bunches ...	3 0	to 5 0
Asparagus, Fern, bunch ...	2 0	2 6	Odontoglossums ...	5 0	7 6
Bouvardia, bunch ...	0 6	0 9	Pelargoniums, doz. bnchs ...	8 0	12 0
Carnations, 12 blooms ...	1 6	2 0	Roses (indoor), doz. ...	2 6	3 6
Cattleyas, per doz. ...	0 0	12 0	" Red, doz. ...	2 0	4 0
Daffodils, single, doz. bnch. ...	2 0	6 0	" Safrano, doz. ...	2 0	3 0
Eucharis, doz. ...	3 0	4 0	" Tea, white, doz. ...	2 0	3 0
Gardenias, doz. ...	1 6	2 6	" Yellow, doz. (Perles) ...	3 0	4 0
Geranium, scarlet, doz. ...	6 0	9 0	" Maréchal Niel, doz. ...	6 0	12 0
" bnchs. ...	3 0	4 0	" English (indoor) :—		
Lilium Harrisii, 12 blooms ...	3 0	4 0	" La France, doz. ...	3 0	6 0
" longiflorum, 12 blooms ...	3 0	4 0	" Mermets, doz. ...	3 0	8 0
Lilac, white, bundle ...	3 0	4 0	Smilax, bunch ...	4 0	6 0
" mauve, bundle ...	2 0	3 0	Tulips, scarlet, bunch ...	0 6	0 8
Lily of the Valley, 12 bun. ...	6 0	18 0	" yellow, bunch ...	1 0	1 6
Maidenhair Fern, doz. bnch. ...	8 0	10 0	" bronze, bunch ...	1 0	1 6
Marguerites, doz. bnchs. ...	3 0	4 0	Violets, Parma, bunch ...	3 0	4 0
" Yellow, doz. bnchs. ...	3 0	4 0	" English, doz. ...	2 0	3 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12 0	to 24 0	Ficus elastica, each ...	1 6	to 7 6
Arbor Vitæ, var., doz. ...	6 0	36 0	Foliage plants, var., each ...	1 0	5 0
Arums, per doz. ...	6 0	8 0	Genistas, per doz. ...	8 0	15 0
Aspidistra, doz. ...	18 0	86 0	Geraniums, scarlet, doz. ...	6 0	10 0
Aspidistra, specimen ...	15 0	20 0	" pink, doz. ...	8 0	10 0
Azaleas, various, each ...	2 6	5 0	Hyacinths, Dutch, doz. ...	10 0	18 0
Boronias, doz. ...	20 0	24 0	Hydrangeas, white, each ...	2 6	5 0
Orotans, doz. ...	18 0	30 0	" pink, doz. ...	12 0	15 0
Cyclamen, doz. ...	6 0	8 0	Lily of Valley, per pot ...	1 0	2 0
Daffodils, pot ...	0 6	1 0	Lycopodiums, doz. ...	3 0	6 0
Dracæna, var., doz. ...	12 0	80 0	Marguerite Daisy, doz. ...	12 0	15 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	8 0	12 0
Erica various, doz. ...	8 0	18 0	Myrtles, doz. ...	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	" specimens ...	21 0	63 0
Ferns, var., doz. ...	4 0	18 0	Spiræas, per doz. ...	8 0	12 0
" small, 100 ...	4 0	8 0			



At the Other Side.

THROUGH the courtesy of a friend we have been allowed to see a packet of most interesting pamphlets and leaflets, all relating to practical agriculture, but not English agriculture—they come from the far-off islands of New Zealand, where there is a most active department of agriculture under the direction of the Hon. John Mackenzie. From his name we should guess he is of Scotch parentage, and certainly he and his department are doing actively good work "at the other side."

The first papers we take up relate to dairying service, cheese and butter factories. It appears the Government support and find work for a dairy commissioner (we wonder where Mr. Lonsdale's commissioner is and what he is called?) We turn to the dairy work first because we have just seen in a neighbouring town excellent New Zealand butter. Now we find these good folks are in advance of us. They are getting rid of the small dairies up and down the country, from which the output of butter, though good, is never uniform. They have grasped the fact that it is more economical and more profitable to work the butter and cheese trade by co-operation, and factories are springing up all over the land. There is one very suggestive remark that caught our eye at once:—"Government advances to dairy companies. For particulars of this means of raising money see the Dairy Industry Act, 1898." That, to our mind, speaks volumes. It is a difficulty to find the money privately for the erections of this nature, but we feel sure that if there were an available fund here in Old England for such a purpose, only too gladly would it be applied for. Private enterprise is all very well, but, so far, it has not answered at home, else why the lack of factories and creameries?

The Government inspector finds the same faults existing there as he would do were he to visit us, and he lays great stress on certain points. He finds much fault with the quality of the milk, and considers this is owing, in a great measure, to the bad keep cows receive in the winter before calving. The cows are not in condition either to produce good milk or strong healthy calves. As the milk is paid for in proportion to the butter fat it contains, this is, to say the least of it, bad policy. He also suggests that a rug for the cows in winter would be a great addition to their comfort and health; certainly it would be a better way of retaining heat than by keeping them too closely packed in ill-ventilated byres. Then, again, he milk flavour is not all that can be desired. He suggests several causes for this, the main one being strong-tasted weeds and coarse herbage, the unclean state of the milking sheds, or the low condition of the cow induced by excessive scouring. We, ourselves, have often got hold of very moderate-flavoured butter in summer, butter that should have been

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Journal of Horticulture.

THURSDAY, MAY 24, 1900.

The Journal of Horticulture can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 12, Mitre Court Chambers, Fleet Street, London.

The Temple Show.



HAPPY thought it undoubtedly was, no matter in whose mind it originated, to secure the only large open lawn within the precincts of the City of London, and convert for a brief space of time the

historic Temple Gardens into a veritable Temple of Flora. There, now for a period of a dozen years and more, has been grouped in the space adjoining the grand promenade on the Thames Embankment the richest and most diversified display of plants and flowers to be seen anywhere towards the close of May.

On the occasion of the summer shows of the Royal Horticultural Society the floral treasures of many lands may be said to be concentrated for a short but brilliant period in the heart of the greatest city of the world, and those of its teeming population who can do so enjoy the feast provided. Numbers of visitors, too, from distant parts of the country, not to say beyond its shores, assemble on the great occasions. The Temple shows bring together all that is most beautiful, rare, and meritorious in Nature assisted by Art—the art of scientific production and splendid cultivation. When this is so it follows that not only the best society in London flock to admire the display and choose what they desire to possess, but the great multitude interested in flowers and other products of gardening skill join to crowd the tents and luxuriate in the feast of beauty therein provided.

In bringing together such gatherings as the Temple Show, and the great show of British grown fruit held at the Crystal Palace, the Royal Horticultural Society is doing much towards acting up to the substance of its charter. We find this to have been granted for the promotion of horticulture, and it would be difficult to conceive of one better form of education, or promotion, call it which you will, than these exhibitions. The visitor whose interest is centred in orchidaceous plants finds in the Temple examples superior to his own, and he has learned a lesson from this simple fact. He has now an object before him which he strives to reach

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—namely, to grow his plants equal to those that have stirred his admiration and aroused a keen enthusiasm to excel. As with Orchids, so with all of the many other products seen—each serves as a whip or spur to urge the grower ever onward towards better things.

In addition to the honour that must be accorded to the Royal Horticultural Society for its excellent work in bringing together these displays, a meed of praise must be given to those people who produce the component parts of the exhibition. These comprise both owners and growers, who for the credit of British horticulture spare no expense in time or labour, and put forth their best efforts to insure the Temple Show reaching nigh on to perfection year by year. But there is still another factor in the great machine, without which the Temple Show would cease to be. This is the permission given by the Benchers of the Inner Temple to the Council of the Royal Horticultural Society to use their beautiful gardens for this purpose. It is a privilege that must be cherished, for there is not another place in London that, all things considered, equals the Inner Temple Gardens for the great annual show of the leading horticultural society of the world. The weather at the time of opening on Wednesday was very wet, but the tents were crowded with visitors during the afternoon.

In this, the thirteenth show in the Temple Gardens, we find comparatively little alteration in the general arrangement of the five commodious tents. Year after year the applications to the authorities for space become more and more numerous, and with equal regularity each applicant has to be cut down in amount. The constant though slow influx of new exhibitors necessitates compression, which is the cause, perhaps, of some disappointment on the part of those who support the society not only at this gathering, but also at the fortnightly Drill Hall meetings. But the result is always the same—a magnificent display of Orchids, Roses, greenhouse and stove plants, hardy flowers, fruits, and vegetables. Quite the finest produce that can be grown is now to be seen in the Temple Gardens, and, as usual many thousands of visitors will enjoy the spectacle.

As the Benchers of the Inner Temple cannot see their way to permitting more ground to be covered with canvas the tents remain as heretofore. We have given the dimensions of them before, but not for some years, and we may therefore repeat them now. The row of three on the Embankment Walk are, commencing at the principal entrance, respectively, 110 feet, 150 feet, and 170 feet long by 28 feet wide each; the central tent is 120 feet long by 40 wide; and the largest of all is 150 feet long by 60 feet wide. These figures are not given as precisely correct, but as approximate thereto, and are sufficiently accurate to indicate the enormous amount of space that is available for exhibits, and which, great though it is, could be filled twice over if room could be found for more tents. But in the general opinion it is large enough, as the extension of space would probably lead to no more desirable result than the mere duplication of many of the plants and flowers shown.

We need not institute comparisons with previous exhibitions, but will rather be content with saying that the present show is generally speaking equal to any of its predecessors, and is in one or two directions distinctly superior. There have been fears that the unfavourable weather would seriously prejudice the excellence of the display; such, however, does not prove to be the case, for though some products would have been the better for an additional three or four days of genial conditions, the greater portion are in that state of perfection to which only the sound knowledge of the British gardener could bring them. We must now turn to the particular exhibits in the various sections, and shall, as is our custom, commence with the Orchids.

Orchids.

There can be little doubt that the most popular section of this magnificent show is the one devoted to Orchids. Nowhere else in the country, or out of it for that matter, can such superb collections be found, and while we miss in this, as in previous shows, one or two exhibitors who rank amongst the foremost as Orchid growers, there yet always remains sufficient to please the ordinary visitor and even the specialist. We yearly look to amateur and professional growers for the products of their skill, and though this is the thirteenth

show, they have never yet failed to respond to the call. We found in the Temple Show on this occasion a very high average of excellence, and in a few instances plants that were decidedly above the usual standard. As has been the case in former years, the entire central staging was devoted to Orchids, and even this does not suffice, for we found in the next tent (No. 4) other collections that go far towards taking this unique display to absolute perfection. Without further preamble we will turn to the several exhibits, taking them in precisely the same order as they are arranged, and not according to their individual excellence.

Messrs. F. Sander & Co., St. Albans, occupied the position of honour in the great Orchid tent, and seldom has it been more worthily filled. The plants were in that excellent condition which ever characterises the Orchids from St. Albans, and the beauty of the arrangement is quite on a par with the quality of the products. The group was splendidly diversified, and comprised many species, hybrids and varieties of fine form. We may quote as amongst the most conspicuous the Cattleyas. Some of the choicest of these were *C. Mossiæ* Princess of Wales, *C. M.* Our Queen, *C. Mendeli* Countess, *C. M.* Prince Edward, and *C. M.* *crispata*, *C. Schroderæ* The Baroness, *Lælio-Cattleya callistoglossa excelsa*, *Miltonia Bleuiana grandiflora*, *Cypripedium Gertrude Hollington*, *C. bellatulum*, *C. Lawrenceanum*, *Oncidium concolor*, *O. ampliatum majus*, *Cattleya Lawrenceana*, *Zygopetalum Perrenoudi*, *Dendrobium Victoria Regina*, *Batemannia grandiflora*, *Odontoglossum excellens Victoria*, *Dendrobium Boxalli*, several *Odontoglossums* including forms of *crispum*, *Adrianæ*, and *Pescatorei*, *Bulbophyllum barbigerum*, and a handsome plant of *Cœlogyne Dayana*. Messrs. Sander & Co. made an edging of a plant of the *Vanilla* in fruit.

The small group of Orchids from Mons. le Marquis de Wavrin, Château de Ronsele, Somerghen, Belgium, was composed wholly of



FIG. 115.—CATTLEYA CITRINA.

varieties of *Cattleya Mossiæ*, some of which were of exceptional excellence. The most meritorious were *C. M.* *fastuosa*, *C. M.* *candidula*, *C. M.* *olivacea*, and *C. M.* *Ronseleana*.

Exceptionally beautiful was the collection of Orchids from Messrs. Charlesworth & Co., Heaton, Bradford. Regarded as a whole it was singularly attractive, as well by reason of the effective arrangement as by the average of merit of the individual plants. High as is the reputation of this Yorkshire house, it is well sustained in their

latest metropolitan effort. Particularly good were the Cattleyas, including *C. Schröderæ* albens, *C. S. alba*, *C. S. heatonense*, numerous forms of *C. Mossiæ*, comprising *Reineckiana* superba, *C. Wm. Murray*, *C. citrina* (fig. 115), *C. Skinneri* alba, and *C. Schilleriana* heatonense. There were also several splendid forms of *Lælia purpurata*, with *Miltonias*, *Masdevallias*, *Oncidiums*, *Phaius Crawshawiana*, *Lycaste Ballæ*, numerous *Odontoglossum crispum*, *O. Adrianiæ Imperiale*, *O. mulus*, *O. hystrix elegans*, *Phaius Charlesworthi*, *Cymbidium Lowianum*, *Dendrobium Phalænopsis Schröderianum* heatonense, and others.

As we have remarked in these columns on more than one occasion, Mr. J. Cypher does not leave Cheltenham for London often enough to satisfy the majority of orchidists. In every plant and every flower we see the stamp of the best of culture, and the taste that is displayed in staging the plants adds greatly to their beauty. Probably the best feature was made by the Cattleyas, amongst which the most prominent were *Lawrenceana*, varieties of *Mossiæ*, *Schilleriana*, *citrina*, *Mendeli*, *Schröderæ*; *Lælia purpurata* in numerous light and dark varieties was superb, as were the specimens of *Dendrobium nobile*, *D. transparens*, *D. atro-violaceum*, *D. Victoria Regina*. In addition to those enumerated we observed fine *Masdevallias*, *Odontoglossums*, with *O. Cervantesi decorum* (fig. 116); *Cypripediums*, including *niveum*, *Miltonias*, and *Sophranitis grandiflora*.

Located for many years at Clapton, Messrs. H. Low & Co. were compelled a comparatively short time back to migrate to Bush Hill Park, and if we may take the plants shown in the Temple Gardens as a criterion, the move was a wise one. The leaves of the plants simply glow with health, and the flowers have that size, substance, and colour that can only be secured under the most favourable conditions. Of more than average merit were *Cattleya Skinneri* alba variety, *Cypripedium l'Ansoni*, *Odontoglossum excellens*, *O. Pescatorei*, *Vanda Agnes Joachim*, *O. crispum* (fine), *Cattleya Mendeli* Mafeking, *Cypripedium Lawrenceanum* Hyeana, *C. Aylingi*, *Phalænopsis Brymerianum*, and the new *Lady Rothschild*, *Cattleya Mossiæ* in variety, and *Odontoglossum crispum* *Britannia* superba.

We should not like to say for how many years Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., V.M.H., Burford Lodge, Dorking, has occupied his present position in the large marquee. Sir Trevor most ably supports the Temple Show, and in doing so places before the general public such a collection of Orchids as could scarcely be equalled from any other private garden in the country. There were specimens ranging from the minute botanical curiosity to handsome plants in large pots carrying flowers of the greatest excellence. We cannot pretend to enumerate them all, and will name *Cœlogyne Dayana*, *Cattleya Mendeli*, *C. Lawrenceana*, *C. Mossiæ*, *Lælia purpurata*, *Masdevallia Harryana acanthifolia*, *Calanthe veratrifolia*, *Oncidium Marshallianum*, *Miltonia Bleuiana nobilior*, *Oncidium concolor*, *Dendrobium cœleste*, *Aërides Houlettiana*, *Spathoglottis aureo Veillardii* (fig. 117), *Dendrobium Jerdonianum*, *Miltonia vexillaria*, *D. infundibulum Jamesianum*, *D. atro-violaceum*, *D. Nestor*, *Masdevallia Harryana violacea*, *Cypripedium Youngianum*, *C. Eleanor*, *C. ciliolare*, *Epidendrum radicans*, *Dendrobium linguiforme*, *Maxillaria Houtteana*, *Phalænopsis Luddemanniana*, *Odontoglossum crispum* in variety and others, *Lælio-Cattleya highburyensis*, *Miltonia flavescens*, and a number of botanical Orchids that create great interest.

Some few weeks ago we had the pleasure of seeing the Orchids at Clare Lawn, and were then more than pleased with the clean healthy growth that is secured by Mr. W. H. Young for Sir Frederick Wigan. The promise of excellence then observable was more than fulfilled by the plants exhibited, and particularly worthy of note were *Epidendrum falcatum*, *E. Wallisi*, *Lælia purpurata*, *Miltonia vexillaria*, *Cattleya Skinneri* alba, *Cymbidium Lowianum*, *Phalænopsis amabilis*, *Cypripedium bellatulum album*, *Miltonia Bleuiana*, *Cattleya Lawrenceana* Hyeana, *C. Mossiæ* Bronze Queen, *Cypripedium barbatum*, *C. W. H. Young*, *Odontoglossum citrosimum*, *Cattleya Mossiæ excellens*, *Miltonia vexillaria* Memoria J. D. Owen, and *Dendrobium Parishii*.

As representative of the county of Hampshire we had Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Eastleigh, who apparently only comes to London with Orchids at Temple Show time, as we do not remember the Fair Oak plants being at the Drill Hall. The plants were effectively staged, and comprised Cattleyas, Oncidiums, Odontoglossums, Cymbidiums, Lælias and others in variety. All the plants were finely grown.

Mons. Florent Claes, Brussels, Belgium, has made for himself an

enviable reputation with *Odontoglossum crispum*, and the plants in the present Temple Show will rather improve this than otherwise. They had wonderful growth, and were carrying handsome spikes. The varieties are numerous.

Another Belgian exhibitor was found in Mons. A. A. Peeters Brussels, who showed *Lælio-Cattleya Ceres*, *L.-C. Canhamiana superba*, *L.-C. Herode*, *Odontoglossum crispum* Stanley, Mrs. F. Peeters, *punctatum*, and *Vigeri*, with *O. Adrianiæ Victoria Regina*.

Several feet of staging had been reserved in this position to accommodate the small exhibits of new and rare Orchids. Amongst the contributors were Mons. Jules Hye Leysen, who had three or four plants in an ugly case; Mons. Ch. Vuylsteke and E. Ashworth, Esq., both of whom staged *Odontoglossums*; H. Little, Esq., who staged a magnificent *Lælia*; and Messrs. J. Veitch & Sons, who sent a handsome bigener.

The last Orchid group to be noted in the big tent was that of Messrs. Stanley Ashton & Co., Southgate, who were represented by a varied and interesting collection. *Cattleya Mossiæ*, *Odontoglossum citrosimum album*, *Cymbidium Lowianum*, *Oncidium concolor*, *Odontoglossum crispum* in variety, *Lælia purpurata*, *Miltonia vexillaria*, *Cypripedium Lawrenceanum*, and *Oncidiums* are conspicuous.

Adjourning now to the smaller central tent we must accord the honour of premier position to Messrs. Lucien Linden, Brussels, who

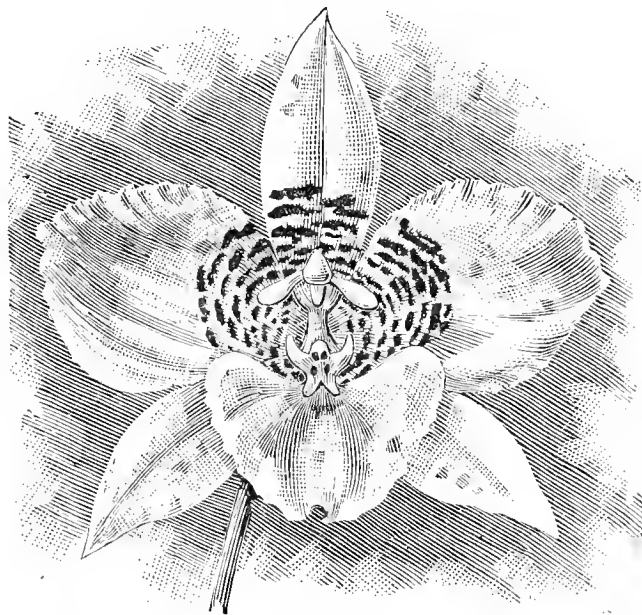


FIG. 116.—ODONTOGLOSSUM CERVANTESI DECORUM.

have a superb exhibit. This Belgian firm has evidently mastered all the secrets of Orchid culture, as was amply demonstrated by the plants in the Temple. In pseudo-bulb, leaf and flowers the plants were practically perfect. The choicest were *Odontoglossum crispum* *Impératrice des Indes*, *c. eminens*, *c. radiosum*, *c. Figaro*, *c. confetti*, *c. Domino*, and *c. exornatum*. There were also several unnamed crispums, as well as of other species. The Belgian firm also contributed *Miltonia vexillaria*, including both pale and rich coloured forms.

Messrs. Backhouse & Son, York, arranged a small group of Orchids with *Asparagus* as a groundwork. There was a fine central specimen of *Lælia purpurata*, with Cattleyas, *Dendrobiums*, and *Odontoglossums*.

Probably the Orchid grower who lives nearest to the Temple Gardens who exhibited is Mr. J. Clarke, gardener to Ludwig Mond, Esq., Avenue Road, Regent's Park. The collection was a small one, but was composed of clean, healthy plants well arranged of *Cymbidium Lowianum*, *Lælia purpurata*, *Odontoglossum crispum*, *Brassia verrucosa*, *Cattleya Mossiæ*, *Miltonia vexillaria*, *Cattleya Mendeli*, *Dendrobium atro-violaceum*, and *Cattleya Schröderæ* alba.

We usually find Messrs. B. S. Williams & Son, Upper Holloway, located in the large marquee, but on this occasion they had a change, and were in the smaller tent. Their group was a most attractive one, as the well grown plants were so tastefully displayed. *Vanda suavis* was superb, as were *Lælia purpurata*, *Vanda tricolor*, *Calanthe veratrifolia*, *Odontoglossum crispum* in variety, *Cattleya Mossiæ*, *Anguloa Clowesi*, *Odontoglossum luteo-purpureum*, *Oncidium concolor*, *Cypripedium Gowerianum magnificum*, *C. Warnerianum*, *Odontoglossum Pescatorei*, and *Cattleya Skinneri*.

Roses.

The queen of flowers made a splendid display, for nearly all the southern trade growers were represented, and the fact that the plants have been grown for the most part in cold houses is sufficient guarantee of their beauty, for while there were many large formal specimen plants, there were others in every shape to take off the stiffness; in fact the Roses at the show, whether plants or cut blossoms, were equal to any of former years, and the various exhibitors displayed much taste in the arrangement of their groups, there was an entire absence of heaviness so often noticeable in groups of this character.

Mr. C. Turner, Slough, staged at the end of the tent a huge bank of glorious Roses in the pink of condition. The chief bank was wholly composed of specimens, interspersed with Acers, while tall specimen standards were placed behind. Palms were also utilised to hide the canvas walling of the tent. Notable were large plants of Mrs. J. Laing, Celino Forestier, Juno, Spencer, La France, and numbers of Crimson Rambler, with a few small Roses for the front, such as Perle d'Or, Madame Abel Chatenay, Souvenir de M. Eugène Verdier, Mrs. S. Crawford, and L'Innocence: a bright and attractive exhibit without a weak plant.

The Cheshunt Roses from Paul & Son, The Old Nurseries, were relegated to their time-honoured corner. The eye rested here on a grand exhibit. The flowers and specimen plants were not only of first-rate quality, but the arrangement was most pleasing, the tall pillar Roses producing quite an artistic display. The specimens included good plants of Mrs. J. Laing, Celine Forestier, Chas. Lawson, Rev. Alan Cheales, Madame de Watteville, The Rev. J. B. M. Camm, a splendid new Rose; Antoine Rivoire, Caroline Testout, Innocente Pirola, and Ulrich Brunner. The exhibit contained some fine standards, such as Marquis Litta, Souvenir de President Carnot, Maréchal Niel, Haileybury, a good coloured Rose, and the Rev. Alan Cheales. The pillar Roses relieved the formality of the exhibit, Crimson Rambler and Psyche forming the chief feature. The exhibit also included some unnamed seedlings of great promise. The edging of Maidenhair Fern gave a pleasing finish.

Messrs. W. Paul & Son, Waltham Cross, contributed a magnificent exhibit of Roses in their usual position in the large tent. The collection, needless to say, was in every way excellent, and included trained specimen plants, with numbers of well developed standards and some really effective pillar Roses. The foliage of all the plants was as fresh and bright as need be. The specimens included good examples of Spencer, La France, Madame Montet, Star of Waltham, Triomphe de Caen, Queen of Queens, Beauty of Waltham, Marie Baumann, Ulrich Brunner, and Mrs. J. Laing. The standards included Ella Gordon, Mrs. Sherman Crawford, Crimson Rambler, Modest, with grand flowers, Sylph and Enchantress. The Polyantha Claire Jacquier, placed alternately with Crimson Rambler, produced a good effect. The new Roses included Exquisite, Corallina and Tennyson all in good form; a capital front with twelve boxes of cut blooms made a good finish to the exhibit; a few baskets of cut Roses were also notable and effective.

Mr. B. R. Cant, Colchester, arranged a pretty exhibit of cut Roses, also some well-grown plants in 8-inch pots, which included Mrs. J. Laing, Ulrich Brunner, Baroness Rothschild, and Carolino Testout. The chief Roses in the boxes were The Bride, really grand; Mrs. J. Laing, Ulrich Brunner, Catherine Mermet, Prince Arthur, Merveille de Lyon, Madame S. Rhodocanachi, Madame Hoste, Maréchal Niel, glorious blooms; and Victor Hugo.

The pot Roses from Messrs. Frank Cant & Co., Braiswick Nurseries, Colchester, were chiefly of the decorative type, lightened with a few standards. Mrs. J. Laing, Madame de Watteville, Muriel Graham, Rainbow, Queen Mab, Bridesmaid, Fabia, Mrs. Paul, Maman Cochet, and Madame Hoste were good; also Mrs. Sandford, Marchioness of Londonderry, Lawrence Allan, Ards Rover, and a collection of Wichuriana Roses that will develop well during the show. The Polyanthas, Perle d'Or, Cecil Brunner, and Ma Paquette were also noteworthy.

Mr. W. Rumsey, Joyning's Nursery, Waltham Cross also contributed an effective exhibit of Roses in pots, with a front composed of boxes of cut blooms edged with Maidenhair Fern. The plants in pots were represented by Magna Charta, Mrs. J. Laing, Boule de Neige, Edouard Morren, Margaret Dickson, Comtesse de Serenye, Captain Hayward, and some fine specimens of Crimson Rambler. The boxes contained good Maréchal Niels, Niphotos, Souvenir d'un Ami, Dupuy Jamain, Margaret Dickson, and Mrs. Rumsey.

Plants and Flowers.

These are always one of the chief features at the Temple, and this year the display made by the different firms appear larger in spite of the fact that a greater variety of plants were exhibited than hitherto. Everyone was pleased to see less of that repetition that we have been accustomed to at this show, but here we had not only all the chief flowers blooming at this season, but the many new species and varieties on view were convincing that hardy flowers are as popular as ever. As to variety, well, we have the pretty little rock and alpine plants so tastefully arranged, and the gigantic Pæonies will serve as a contrast.

Mr. Charles Turner, Slough, arranged on either side of his Roses on the right, a few specimen Azaleas, such as Roi d'Hollande, Ceres, Grandis, Charmer, Duchesse A. de Nassau, and Marie Planchon; and on the left a few good specimen plants of Regal Pelargoniums, reminding visitors of bygone days. The best varieties are Edward Perkins, Joe, Rosetta, Empress of India, and Prince Leopold. A row of gigantic Malmaison Carnations formed a front not to be despised.

Messrs. J. Waterer & Sons, Ltd., Bagshot, had a large and varied group or bank of Rhododendrons in all their spring beauty, arranged

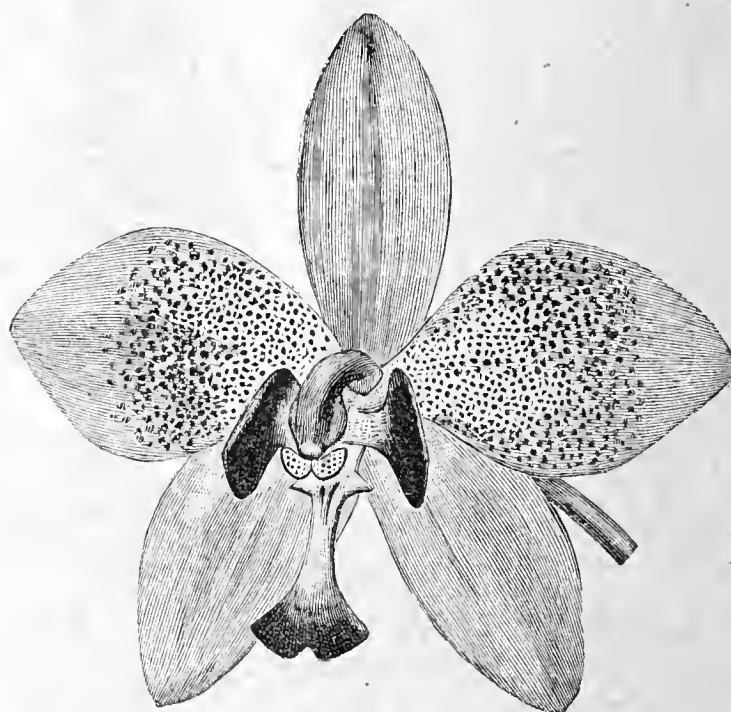


FIG. 117.—SPATHOGLOTTIS AUREO-VEILLARDII.

with a background of Acers in variety. The front was also finished with small Acers as graceful in appearance as Ferns, with *Ledum palustre*. The varieties included good plants of Sappho, Michael Waterer, Frederick Waterer, W. E. Gladstone, Pink Pearl in grand form, Cynthia, Francis B. Hayes, and John Waterer. The flowers were large, beautifully fresh and bright; a delightful exhibit.

Messrs. J. Peed & Son, Norwood, have been noted for their Temple displays of Caladiums, and this year again they have demonstrated the value of these ornamental foliage plants, and the exhibit was quite up to their usual style. The specimens were well coloured, and displayed with Maidenhair Ferns, while a few Palms at the rear lent grace to the exhibit. Fine specimens of John Peed, Lillie Burke, La Lorraine, Maria Mitana, Mrs. Harry Veitch, W. E. Gladstone, Princess of Teck, Lady Mosley, and Rio de Janeiro were noted amongst many others.

Messrs. J. Laing & Sons, Forest Hill, arranged a fine group of miscellaneous plants, in which Begonias, both single and double, formed the chief feature. Graceful Cocos and Caladiums were utilised with Ferns, Crotons, Nepenthes, and Orchids in variety, all in the best possible form. The best Begonias were Duke of Fife, a grand variety; Lady Tweedmouth, Mrs. Hall, Duchess of York, Duchess of Albany, Marchioness of Northampton, Miss Knollys, Saturn. The arrangement displayed the foliage plants well, as it did the Begonias also.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, contributed as exhibitors a large and varied display of plants. The Rhododendrons, Azaleas of the mollis and sinensis types were beautiful, and included Anthony Koster, Marshal Blucher, Alma Tadema, A. M. Koster, and Glory of Boskoop. Mount Pæonies were also gorgeous, the chief being Grand Duc de Baden, Regina Belgica, and Emilia. The quaint spikes of *Eremurus* in variety gave a curious effect. Standard Wistarias, Cytisus, Loniceras, and Laburnums were conspicuous, as was also a grand

branch of *Embothrium coccineum* with its scarlet flowers. *Philadelphus Lemoinei* Boule d'Argent (fig. 118, see page 436) arranged in baskets was also a feature; while the front contained *Hydrangeas stellata* fl.-pl. and *japonica tricolor* with numbers of small *Acers*, all beautifully coloured.

Mr. J. Jennings, gardener to L. de Rothschild, Esq., Ascott, had a semi-circular group of Carnations in pots that attracted the eye immediately on entering the tent. The well known form of Jim Smyth, with its bright scarlet flowers, formed the chief feature, while Sergeant George, Mrs. Streatfield, Sir C. Freemantle, Nell Gwynne, Miss A. Campbell, and Abigail assisted to make an effective group. The edging of Maidenhair Ferns and small Palms gave a desirable finish.

A truly magnificent display of plants was presented by Messrs. W. Cutbush & Son, Highgate, which was so extensive, and contained such a variety of plants, that it can be described as a flower show in itself. The plan of the exhibit was well executed, and the gigantic Palms that formed the background made a capital back to the exhibit, much more pleasing to look upon than the dirty canvas so apparent in many cases. The arrangement of the group left little to be desired practically speaking. The Malmaison Carnations formed the groundwork, from which graceful foliage and flowering plants formed miniature hillocks. The chief of the Carnations were Cecilia, a good yellow, Jane Seymour, Duke of York, Juliette, Lord Welby, a splendid red Malmaison, Adelina Patti, Wm. Robinson, Herbert J. Cutbush, a good petalled scarlet, and Princess of Wales. Groups of *Calla Elliottiana*, Moutan Pæonies, *Boronias*, and a ground edging of Ferns completed a grand exhibit.

Messrs. R. Smith & Co., Worcester, again delighted the visitors with a display of Clematises grown in pots all trained in balloon shape. The chief varieties were Lucie Lemoine, a well known double white, Lady Caroline Neville, Lord Neville, Princess of Wales, *Purpurea elegans*, a real picture; Fairy Queen, Excelsior and La France. The plants were all well flowered and developed. The same firm also arranged neatly a few well-flowered specimens of Crimson Rambler Rose. A delightful exhibit was seen in Messrs. J. Veitch & Sons'; Limited, Caladiums. The huge specimens were well grown, of beautiful colour, and the leaves in capital preservation. They were also arranged in such a manner that every specimen could be clearly seen, the leaves of some varieties being gigantic. Fine specimens of Louis A. Van Houtte, Gaspard Crayer, Baron A. de Rothschild, Duchesse de Mortemart, Rose Laing (grand), B. S. Williams, and the Marquis of Camden were to be seen amongst many others.

From Messrs. J. Jackman & Co., Woking, came a delightful display of Clematises and *Acers*. The plants included some very fine specimens, all remarkably clear and bright. The *Coccinea* hybrids were striking, and included Countess of Onslow, Duchess of York, Duchess of Albany, Admiration, Grace Darling, and the old *Coccinea*. Grand plants of Alba Magna, Fairy Queen, and Otto Froebel were conspicuous, as were also Lady C. Neville, Duchess of Edinboro', Henryi, and Mrs. Hope. The edging of *Spiræa* was effective. Messrs. Sutton and Sons, Reading, arranged a semi-circular group of herbaceous Calceolarias in the large tent, and right worthy were they of the position, for a better strain could not be desired. The plants were dwarf, and the blooms large and well spotted, while the variety in colouring leaves little to be desired.

Messrs. Kelway & Son, Langport, made a pleasing and interesting exhibit with their Pæonies and a few Pyrethrums. The Moutan varieties were especially fine. The chief were Lady Sarah Wilson, Lord Roberts, General French, General McDonald, and Lady Georgina Curzon, while the older forms were represented by Rudyard Kipling, Volunteer, Burne Jones, and Andrew Carnegie. Some of the herbaceous varieties were also on view and add to the effect.

The Home for Flowers of Messrs. H. Cannell & Sons, Swanley, does not belie its name, for the Cannas arranged appear to have come from a very delightful home, judging by the clean, smart appearance they produced; the spikes were large and the individual blooms bright and clean. The most striking varieties are Aug. Chautin, Duchess of York, Queen Charlotte, Pioneer, Menelik, Duke of Marlborough, Sec. Chabaune, Chicago, and Sister Dora. A small exhibit of double and single Begonias was composed of excellent plants, and included good blooms of Lady Bigge, Lady Churchill, Sir J. B. Maple, Mrs. Baden Powell, Admiral Dewey, Prince Henry, and Dr. Nansen. The same firm also contributed a good strain of herbaceous Calceolarias in fine variety, the plants were also of good habit; while a grand collection of Cacti containing some grand speci-

mens completed the display. Large plants of *Echinocactus Grusoni*, *Agave Victoria Regina*, *Cereus* in variety, *Opuntia ursinus*, were particularly noticeable.

Messrs. J. James & Son, Farnham Royal, staged a quantity of herbaceous Calceolarias, all fine plants, carrying a wealth of bright blossoms; for habit of plant, clear colouring and variety the strain will be hard to beat, and the general appearance of the plants was most satisfactory.

The Begonias of Messrs. T. S. Ware, Ltd., Feltham, created a furor last year, and the present exhibit was one that is likely to keep up the firm's reputation, not only as vendors of the tubers, but as growers of the plants also, for the collection was unique, the double varieties being especially good. The Duke of York, Mrs. Jas. Portbury, Miss Sylvia Morris, Lord Rosebery, Brilliant, Her Majesty, Mr. W. G. Valentine, Baden Powell, Lord Roberts, Captain Lambton, Lady Audrey Buller, Miss Jessie Pope, and Miss Else Engel were remarkably fine. Good single varieties were Novelty, Miss Nellie Thackery, Penracola, Mr. Harry Webb, Perfection, Majestic, Madame Belle Cole, and Miss Ada Jordan. The bank was quite a mass of gigantic flowers. The same firm also contributed a tasteful display of hardy flowers, with alpine and rock plants. The plants were effectively arranged and much admired. Pans of *Orchis fusca* with its quaint colouring, *Incarvillea Delavayi*, Iris Eggeri, *Primula Sieboldi*, *Cypripediums* in variety, and some Moutan Pæonies were most conspicuous.

Messrs. J. Laing & Sons, Forest Hill, occupied a table near the entrance of tent 3 with a variety of foliage and flowering plants. The *Streptocarpus* in variety were notable, while *Caladiums*, Palms, *Dracænas*, *Saxifragas*, and foliage Begonias made a fine display.

A magnificent display of hardy Azaleas came from Messrs. R. and G. Cuthbert, Southgate. The plants were well arranged, and the colours most pleasing. In the Mollis section the new Mrs. L. J. Endtz, a grand yellow, stood out clearly; as did Hugo Koster, Alphonse Levallee, Anthony Koster, President Carnot, and J. C. Van Thol. The Rustica hybrids were well represented, and included good plants of Apellus, Il Tirso, Aida, Mecene, and Norma. The exhibit was well arranged, every plant showing to its best purpose.

Messrs. Fisher, Son & Sibray, Ltd., Sheffield, occupied a good position in the centre of the tent with some beautiful foliage plants, which included good plants of *Aralia pulchra*, *A. Schufferi*, with some well-coloured Crotons and *Dracænas*. Bamboos gave the exhibit a light appearance, and some Cattleys, *Cypripediums*, *Odontoglossums* lent colour to the display, while a pretty groundwork was formed of dwarf foliage in variety. The front of the group was especially well arranged.

Messrs. Sander & Co., St. Albans, arranged a group of Azalea indica in the centre of the tent. The plants were decidedly formal in shape, but a perfect mass of brilliant flowers; they were an object lesson to those that require a list of Azaleas for next year's growing. The best varieties were Apollo, Donor, President Pfaff, Flora, Jean van Dyck (a bright scarlet), Princess Clementino, Schnee, Unica and General Portmeister Stephan, but all were really good and exhibited in first-rate style.

Messrs. J. Russell, Richmond, again demonstrated the value of Azalea hybrids, and on this occasion the A. Mollis were excellent, as were also the Ghent and Rustica varieties. In the former section Anthony Koster and Alphonse Lavellee were really good, while the hybrids were staged in a variety of colours. The edging of *Crocusma Baueriana variegata* was fairly effective.

In tent 3 Messrs. Barr & Sons, Covent Garden, had a remarkable display of hardy flowers and Tulips that occupied at least 100 feet. Not only was the exhibit large but extremely varied and well arranged. The little rock plants were tastefully arranged, and the specimens typical. The *Oxalis repens*, *Viola tricolor*, *Aubriotias*, and *Phlox atro-purpurea*, *Saxifraga pyramidalis*, Iris Susiana, *Gentiana verna* were all notable here, while arranged in stands were huge bunches of Pæonies, *Anemone pulsatilla*, *Lilium Harrisii* and *candidum*, with *Gladioli* Peach Blossom and Blushing Bride. A few late Daffodils reminded one of the closing season, while *Geums* *miniaturum*, *hybridum*, and *coccineum*, *Trollius napellifolius* and *japonicus* fl.-pl. shared the honours with bowls of Aneimones, a beautiful display of Spanish Irises, and Iceland Poppies. As showing the variety in the exhibit we next saw a collection of Japanese dwarfed trees, that were decidedly more curious than beautiful. Darwin Tulips were staged in grand variety, and included the well known forms of Loveliness, Rev. Ewbank, Glow, Maiden's Blush, Margaret, Joseph

Chamberlain, The Sultan, and May Queen, also a collection of cottage Tulips that were very pleasing. The species of *Tulipa* are also well represented, as are the Parrot and English Show varieties. These make a grand show in themselves, and contribute largely to the splendid exhibit.

A charming exhibit was that from Messrs. Backhouse & Son, Ltd., York. The rock and alpine plants were arranged as naturally as possible in miniature rockwork. The notable plants contained in this collection were *Androsace sarmentosa*, *Chumbyi*, *Saponaria ocymoides* alba, *Primula longiflora*, *Cistus purpureus*, a few Ferns, and a quantity of Sedums, Saxifragas, and similar plants were notable in a large variety of plants admirably arranged.

Gloxinias were staged by Mr. J. J. Upton, Irlam, Manchester. The exhibit was good, containing as it did a great variety in colour and marking. The plants were well grown and well flowered, while a few Maidenhair Ferns and *Caladium argyrites* gave a light appearance to the exhibit.

Mr. H. B. May, Dyson's Lane Nurseries, Edmonton, occupied both corners and a large space on the centre table with his exhibit, which was composed largely of Ferns, Zonal Pelargoniums, Coleuses. The Ferns comprised specimens of *Platycerium grande*, *Blechnum corcovadense undulatum*, *Nephrolepis pectinata*, and *Davallia decora*. Plants of *Clematis Nellie Moser*, Crimson Rambler Roses, *Statice profusa*, gave a little colour to the exhibit, while some good Coleuses, such as Mrs. Tolworthy, Victor, Golden Gem and Crimson Gem were conspicuous. A few well flowered Zonal Pelargoniums and Ivy-leaved Geraniums were also in good form. The Zonal Decorator is a grand variety, and the hybrid Achievement is also worthy of note.

Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, again staged his collection of insectivorous plants, which attracted a dense crowd round the boxes all day, and made notetaking more than difficult. The Sarracenias included *Stevensi*, *Atkinsoni*, *crispata*, *Tolliana*, *Drummondii* alba and *Swaniana*, *Drosera dichotoma*, *Cephalotus follicularis*, *Dionaea muscipula*, and in fact the entire collection is well grown, and the plants the picture of health, certainly forming an interesting exhibit. Messrs. Young & Co., Stevenage, exhibited a collection of Cacti, also a few herbaceous plants, with Pansies and a few rock plants.

Messrs. Hugh Low & Co., staged a novel exhibit in a collection of *Schizanthuses*. The plants were a perfect mass of flowers, and several shades of colour were staged, demonstrating their value for decorative work. Messrs. J. Jackman & Sons, Woking, arranged a large exhibit of hardy flowers, which included some good *Aquilegia* hybrids. Geum in variety, Moutan Paeonies, *Edrianthus dalmaticus*, *Oenothera speciosa*, *Aster alpinus superbus*, *Primula japonica*, *Anemone sylvestris* fl.-pl., and *Trollius Orange Globe* were excellent amongst many other subjects, which it is impossible to enumerate.

A good display of herbaceous plants and Rhododendrons was staged by Messrs. Paul & Son, Cheshunt. The latter contained some bright hybrids from *R. Fortunei*. The Tulips were a feature, especially the Parrot varieties, and a few of the species. The Funkias also had good attractive foliage, while a collection of rock plants was tastefully arranged in boxes, and included many well-known plants suitable for the purpose.

It is doubtful if Messrs. Wallace & Co., Colchester, have ever staged a better display of Liliiums and rare hardy plants than those seen on this occasion. The collection of *Cypripediums* included beautiful plants of *spectabile*, *C. parviflorum*, *C. occidentale*, *calceolus*, *candidum*, and *pubescens*. The collection of Tulip species was a representative one, and included good specimens of most forms. Spanish Irises are staged in great variety, and a collection of Moutan Paeonies gave variety to the exhibit. A few choice *Calochortus* was admired, while *Lilium rubellum*, in fine form; *L. Thunbergianum* Orange Queen, *L. umbellatum grandiflorum*, *L. T. Van Houttei*, *L. u. erectum*, *L. Szovitzianum*, *L. longiflorum giganteum*, and *L. T. marmoratum aureum*, formed part of a choice collection grouped with Acers and Bambusas, and made a pleasing display.

Mr. J. Fleming, gardener to Sir Charles Pigott, Bart., Wexham Park, Slough, arranged an effective group of foliage and flowering plants of a decorative character. The arrangement was good and well executed. The flowering plants included splendid Malmaison Carnations, *Oncidiums*, *Dendrobiums*, *Ericas*, which included some fine plants of *E. Cavendishi*, *Boronias*, and *Lilium Harrisii*. The chief foliage plants were Crotons, Palms, Ferns, *Alocasias*, *Caladiums* and *Dracenas*. The groundwork and edging of Ferns, *Isolepis*, and tiny *Caladiums* was most effective.

Mr. Arthur Knowles, Horsell Birch Nursery, Woking, sent a basket of *Daphne cneorum* major, a pretty hardy shrub, well known and recently seen at previous meetings. The plants were well flowered. Messrs. Sutton & Sons, Reading, staged a large exhibit of *Nemesia strumosa* hybrids in variety; there is apparent improvement in the colours, of which there is now a wide range. The wind and rain had militated against the appearance of the plants, but no doubt they will improve during the show.

Calceolarias of the herbaceous type were staged by Messrs. Webb and Sons, Stourbridge, and a remarkably fine strain it is. The

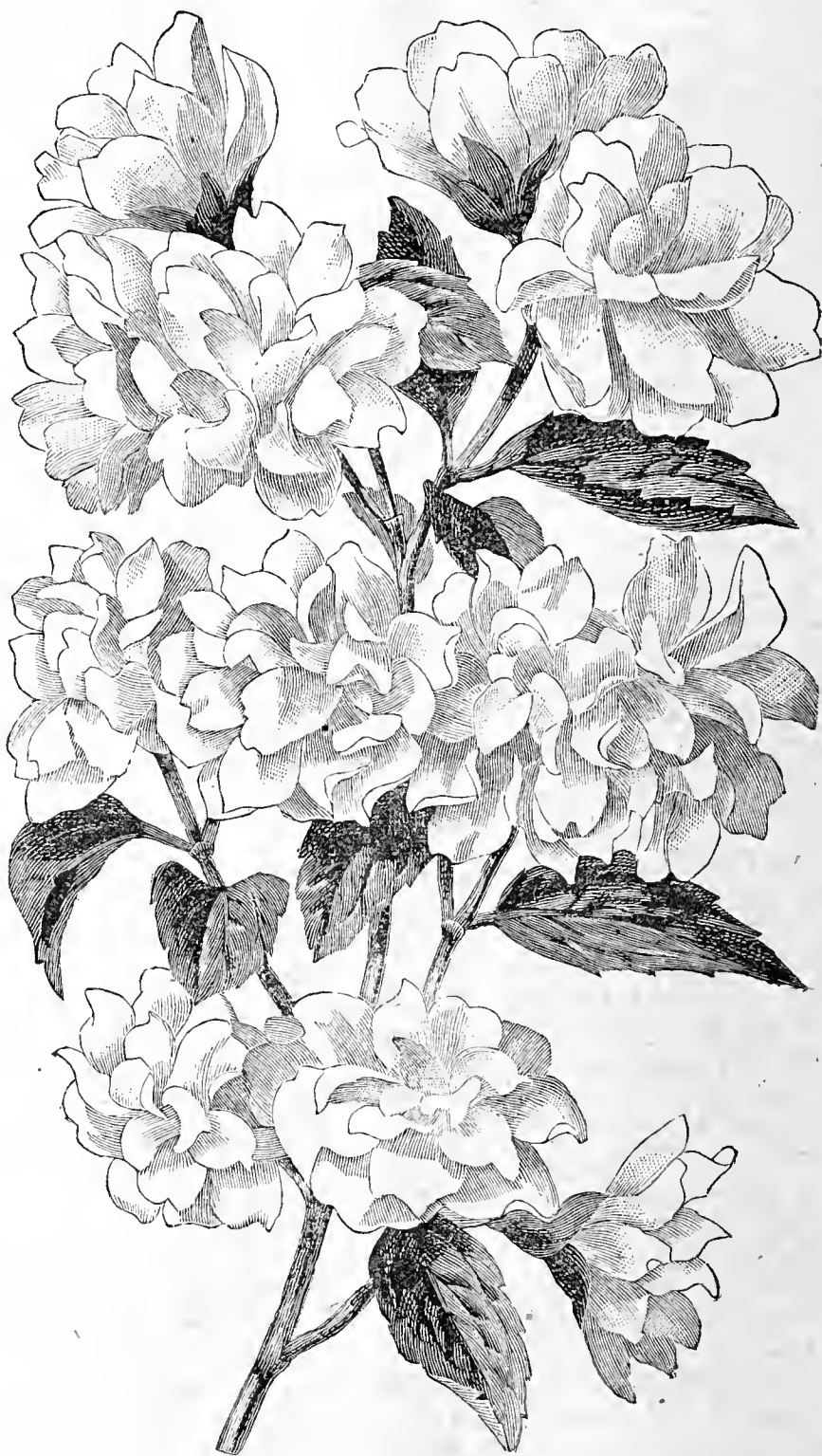


FIG. 118.—PHILADELPHUS BOULE D'ARGENT. (See page 435).

colours are clean cut and bright, while the habit of the plants is decidedly dwarf. The enormous bank of bloom presented a fine appearance, and should do much to convince the public that the strain is one of the best extant. The edging of Ferns and Selaginellas all contributed to the beauty of the exhibit. The same firm also staged Gloxinias and Begonias that had been damaged in transit.

Mr. A. Perry, Winchmore Hill, had a grand display of hardy flowers, in which many new forms were to be seen; in fact the whole exhibit was most interesting, and included *Myosotis rupicola*, *Phlox The Bride*, *Oenothera speciosa rosea*, *Phlox G. F. Wilson*, *Primula japonica*, *Tulipa Picotee*, *Phlox canadensis* (fig. 119, page 438), *P. atro-purpurea*, Geums in variety, *Paeony tenuifolia*, *Incarvillea Delavayi*, *Aubrietia purpurea*, and *Ramondia pyrenaica*. These were all excellent, and a great many others might be classed in the same category. Mr. E. S. Towel, Hampton Hill, staged *Pelargonium Fire Dragon*, a semi-double form with narrow petals.

From Mr. H. J. Jones, Ryecroft Nursery, Lewisham, came a large exhibit of Tulips, Spanish Irises, Gladioli, and Begonias. The Tulips represented collections of cottage garden and Darwin varieties. Among the Darwins *Wilhelmina*, *Phyllis*, *May Queen*, and *Zephyr* were notable; *Tulipa Gesneriana strangulata*, a grand red variety, *T. flava*, *Ixias* in variety, and a few late Daffodils, which with *Spiræas*, and a variety of decorative plants, made a fine collection. There were also a few bunches of hardy flowers, with a good plant of H. J. Jones Carnation, a good dark crimson of the *Malmaison* section. Mrs. J. G. Day, a new Ivy-leaved *Pelargonium*, and a representative collection of single and double Begonias, in which the following varieties were good:—Mr. Harrison, Dick, *Admiration*, *Sensation*, *Exquisite*, H. J. Jones, Mrs. W. H. Webb, *Nero*, *Snowdrift*, and Mrs. J. B. Baxter. The plants were staged in *Panicum* and *Maidenhair* Ferns, and the arrangement proved most attractive.

Mr. Wm. Icton, Putney, always noted for his Palms and decorative plants, arranged a collection of foliage and flowering plants. In the former section the *Caladiums*, *Acers*, *Bambusas*, *Palms*, and *Ferns* were to the fore, while the flowering plants were represented by *Lilium Harrisii*, *Erica Cavendishi*, *Boronias*, *Spiræas*, and *Lily of the Valley*. The whole arrangement was carefully carried out, and presented a pleasing appearance.

Lily of the Valley was arranged by Mr. J. Jannock, Dersingham, Sandringham, in Royal style with a few large vases of single and double Lilacs. The "Fortins" variety of Lilies was shown in good form, while the Lilacs included *Charles X.*, *Madame Abel Chatenay*, *Madame Lemoine*, double white; *Marie Legrange*, and *Président Grevy*. An artistic effect was produced by sprays of *Asparagus*.

From Messrs. J. Peed & Sons, Norwood, came a pretty and varied collection of *Gloxinias*; the plants were well developed, and the flowers fresh and bright; selfs and spotted flowers were equally represented, and the strain is undoubtedly a good one. The whole formed a most attractive exhibit. The Guildford Hardy Plant Co., Guildford, had a most interesting and beautiful display of rock and alpine plants, also a collection of *Conifers* arranged behind in the way of a miniature forest. *Geums* were there in variety, hardy *Cypripediums*, *Primula japonica splendens*, *Violas* in variety, *Houstonias* full of bloom, pretty *Phloxes*, *Gentianas*, *Oxalis*, and *Trollius europæus*. Judging from the crowd in front of this exhibit it was highly appreciated.

Mr. M. Prichard, Christchurch, Hants, is well known as an exhibitor of hardy plants, and on this occasion made not only a large display, but also an interesting one. The blooms of *Iris Susiana*, *Tulipa Picotee*, *Centaurea montana*, *Spiræa reticulata*, *Pyrethrums* in variety, *Campanula dahurica* with its deep violet colour, *Geum miniatum*, *Trollius multiflorus* and *asiaticus*, *Oxalis enneaphylla*, and *Cytisus purpureus incarnatus*, amongst others, helped to make up this splendid display.

Messrs. W. Paul & Son, Waltham Cross, had a number of boxes containing a good collection of Lilacs, *Rhododendrons*, and other hardy plants. The Lilacs were particularly fine, *Madame Lemoine*, *Madame Cassimer Perrier*, *La Tour d'Anvergne*, and *Géant des Batailles* being amongst the best. From Messrs. I. House & Son, Westbury-on-Trym, Bristol, came a collection of *Fancy Pansies* and *Violas*, all growing in pots, not perhaps the best method of showing them for effect. The best *Violas* were *Amy Barr*, *Lady Reah*, *Argosy*, *Golden Fleece*, *Ruth*, *Border Witch*, *Kitty Belle*, and Mrs. R. K. Mitchell, also some glasses of *Viola cucullata*, a variety with long stems, said to be useful for growing under trees.

On a huge centre table Messrs. J. Veitch & Sons, Ltd., arranged a magnificent exhibit of *Streptocarpus*, containing hundreds of plants in a great variety of colours. The individual plants were all well flowered. Then there was a wonderful collection of *Phyllocactus* in a great variety of colours, with a group of hybrid *Aquilegias* in pots. The strain is undoubtedly a good one, for the colours of the flowers are most delicate. The *Phyllocacti* included *Ena*, a rosy red variety; *Adonis*, a rosy pink form; *Epirus*, *Admiration*, *La Reine*, *Jessica*, a delicate pink; *Exquisite*, *Romeo*, crimson edged purple; *Brilliant*, a bright crimson; *La Belle*, a creamy white; *Cooperi*, white, and *Nemesis*, a grand pink. The *Streptocarpus* hybrids were to be seen in many colours, the variety *S. achimeniflorus giganteus* and *S. a. alba* being especially fine and free flowering.

Ireland was to the fore with a grand display of Tulips sent by Messrs. Hogg & Robertson, Mary Street, Dublin. The Darwin varieties had suffered somewhat from the weather, but the cottage varieties and *Tulipa* species were well grown, and a capital display was the result. The collection of *Cacti* from Mrs. Bodkin formed a pleasing change to

the glare of neighbouring exhibits and was much appreciated, a few *Epiphyllums* and *Phyllocacti* were in flower, and the rest of the curiosities seem to be well cared for. Messrs. R. Smith & Co., Worcester, arranged a large bank of hardy flowers in which the following were noted:—*Heuchera sanguinea*, *Phlox canadense*, *Adonis pyrenaica*, *Lupinus nootkatensis*, *Irises* in variety, *Montan Pæonies*, *Geums* in large variety, *Trollius caucasicus* and fine Tulips; a well displayed exhibit.

From the Midlands we had a beautiful collection of *Violas* staged by Mr. W. Sydenham, Tamworth. The sprays were arranged with *Maidenhair*, and the following were the best forms:—*Mary Scott*, *Kitty Bell*, *Niphetos*, *Amy Barr*, *Hawk*, *Primrose League*, and Mr. A. D. Parker. Mr. W. J. Godfrey, Exmouth, made a pleasing display of *Emanuel Lias*, a decorative *Pelargonium*, very free flowering, and the habit of the plant is also good.

From Messrs. J. Cheal & Sons, Crawley, came a small collection of *Violas*, which included good sprays of *Melampus*, *Hamish*, *Sydney*, *Duchess of Sutherland*, *J. B. Riding*, *Countess of Kintore*, and *Border Witch*; also a collection of hardy flowering shrubs, which included large bunches of *Exochorda grandiflora*, *Viburnum Lantana*, *Prunus* in variety; also a pretty rockwork arrangement, tastefully planted with *Phlox G. F. Wilson*, *P. frondosa*, *P. Vivid*, and *The Bride*; *Viola bicolor*, *Gentiana acaulis*, and a variety of *Sedums* and *Saxifragas* in quantity. Mr. H. Walters, gardener to Lord Gerrard, Eastwell Park, Ashford, exhibited a group of *Carnations*, a pale straw colour named *Lady Gerrard*, a variety that has evidently some *Malmaison* blood in it.

A collection of *Sweet Peas* was staged by Messrs. Dobbie & Co., Rothesay, which included all the well known forms. The vases were well arranged, but the flowers had evidently opened under a little too much persuasion; also *African* and *French Marigolds* in pots. From Mr. S. Bide came a basket of *Callas* named *Primrose League*, a pale form of *C. Elliotiana*; the pale lemon colour will be attractive.

Messrs. Carter & Co., High Holborn, occupied the entire centre of one tent with their exhibit, which was comprised chiefly of *Cineraria stellata* in good variety; *Empress Petunias*, a single strain of excellent quality; double *Petunias*, a choice strain of beautiful double flowers; herbaceous *Calceolarias*, a well spotted strain, excellent in size and of good habit; a well-arranged rock garden, beautifully stocked with a variety of plants, while a trophy of *Lily of the Valley* in the centre made an imposing exhibit.

Fruits and Vegetables.

In estimating the merits of the vegetables that are contributed to this portion of the show, it is essential that the season through which we are at present passing be taken into consideration. We have to bear in mind that it has, generally speaking, been decidedly unfavourable to all vegetation, and naturally this applies with great force to kitchen garden crops. Having this in view we think everyone will be agreed that the products shown were most meritorious and reflect the utmost credit upon the producers. Fruit again was really splendid, and the trees in pots were a constant source of surprise and delight to the thousands of interested spectators. Some of these were critical in their remarks, but there was little to cavil at, as the untoward weather, though it may not affect indoor as much as outdoor crops, is undoubtedly prejudicial to the perfect development of all kinds of fruit, not excepting those grown under glass.

There was one feature of the Temple Show which would be missed, perhaps, more than any other, and that is the collection of fruit trees in pots from Messrs. T. Rivers & Son, Sawbridgeworth. They annually occupy a position in the large marquee, and the more frequently they are seen the more they are appreciated by the spectators. The trees are invariably characterised by clean, stout growth with no suspicion of over-luxuriance, and substantial healthy leaves. The only variety represented on this occasion was *Cardinal Nectarine*, which is now so widely known and appreciated.

Visitors this year had a treat that is not annually vouchsafed to them, and this was found in the exhibit of fruit trees in pots from Mr. J. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton. Few, if any, gardeners have done more than Mr. Hudson in endeavouring to popularise this phase of fruit culture, and the trees exhibited proved how able is he to teach others in what way they should go to insure the most satisfactory results. There were magnificent *Peaches*, *Nectarines*, *Plums*, *Cherries*, and *Grapes*, with examples of the fruit in boxes in the foreground. The *Cherries*

comprised Bigarreau de Schrecken, Governor Wood, Frogmore, Early Bigarreau, and Empress Eugénie. Early Prolific Plum was very fine, as were Cardinal Nectarine and Amsden June Peach. Mr. J. Hudson sent also a box of handsome Royal Sovereign Strawberry.

The reputation that has been gained by Messrs. Sutton & Sons, Reading, for the excellence of their strains of Marrowfat Peas, that any exhibit of these from this source is sure to be hailed with pleasure. The early varieties of Marrowfat Peas have the immense advantage of being ready for use before the hard, round seeded sorts, while of course possessing the much superior Marrowfat flavour. There were two varieties represented in large mounds—namely, Early Giant and Bountiful. The pods were magnificent.

Mr. S. Mortimer, Rowledge, Farnham, is a regular attendant at the Temple Show, and his exhibits are invariably worthy of close inspection. On this occasion he had eight boxes of Cucumbers, containing handsome examples of Marvel, Sutton's A1, Sutton's Peerless, Tender and True, Telegraph, and Lockie's Perfection. They were quite a treat to see after the feast of flowers.

As a grower of choice fruit, Mr. J. McIndoe, gardener to Sir Joseph Pease, Bart., M.P., is well known, and the collection from Hutton Hall was particularly meritorious. The Grapes included Black Hamburg, Foster's Seedling, and Early Summer Frontignan; a shapely Pine; Royal Sovereign Strawberry; Hutton Hall, Scarlet Premier, Best of All, and Yorkshire Beauty Melons; Downton, Bigarreau Napoleon, May Duke, and Black Tartarian Cherries; The Czar Plum, Brown Turkey Figs, Early Rivers and Précoce de Croncels Nectarines, with Apples and Tomatoes were shown.

A small group of Nectarines and Peaches in baskets was shown by Messrs. T. Rivers & Son, in addition to the pot trees. The Peaches included the Duke of York (Early Rivers Nectarine and Alexander Peach), Duchess of York (Nectarine Early Rivers and Early Rivers Peach), and Prince Edward (Early Rivers Nectarine and Hale's Early Peach); gathering of Duchess of York commenced on May 1st. The Nectarine was Cardinal, in superb form.

Mr. W. Godfrey, Colchester, was represented by a number of bunches of Asparagus; the heads were simply immense. Mr. A. J. Harwood, another Colchester grower, contributed similar produce.

A miscellaneous group of fruits and vegetables was contributed by Mr. W. L. Bastin, gardener to Alexander Henderson, Esq., M.P., Buscot Park, Faringdon. The only vegetables were Asparagus, French Beans, Cauliflowers, Cucumbers, and Tomatoes. Of fruits we observed Melons, Apples, Strawberries, Peaches, Nectarines, Figs, and Cherries.

A meritorious exhibit was that from Mr. W. Fife, gardener to Lord Wantage, V.C., Lockinge Park, Wantage, which was arranged in a perfectly unique manner. Each dish of fruit was surrounded by beautiful blooms of Fortune's Yellow Rose, the peculiar colour of which in some instances detracted from the appearance of the fruit. Amongst other dishes were Buckland Sweetwater, Madresfield Court, Foster's Seedling and Black Hamburg Grapes; Hero of Lockinge and British Queen Melons; Adam's Pearmain, Winter Queening and King of Tompkins County Apples, with Royal Sovereign Strawberries, Empress Eugénie Cherries, White Marseilles Fig, Monstera deliciosa, Citrons, Tomatoes and Oranges.

Apples from Messrs. G. Bunyard & Co., Maidstone, may be taken to mean most excellent Apples. The fruits have size as well as firmness and colour, and it is a matter for regret that smaller growers cannot keep them so long. The most conspicuous dishes were Nelson Codlin, Cornish Aromatic, Tibbit's Pearmain, Mother, Newton Wonder, Sanspareil, Tyler's Kernel, New Hawthornden, Hoary Morning, Grange's Pearmain, Rosemary Russet, Gloria Mundi, Beauty of Kent, Bramley Seedling, Lord Derby, Smart's Prince Arthur, Cox's Orange Pippin, Annie Elizabeth, Striped Beefing, Bismarck, Betty Geeson, Wellington, King's Acre Pippin, and Baxter's Pearmain.

Messrs. J. Watkins & Co., Withington, Hereford, also contributed Apples to the general display, and the richness of colour that is taken on in that favoured county made them look very handsome. The several fruits were firm and solid, and included Claygate Pearmain, New Bess Pool, Northern Spy, Gooseberry, Wadhurst Pippin, Hoary Morning, Baxter's Pearmain, Rymer, Aromatic Russet, Court. Pendu Plât, Blenheim Orange, Royal Russet, Winter Peach, Sturmer Pippin, Calville Malingre, Graham, Beauty of Kent, Norfolk Beefing, and Duke of Devonshire.

Fragrance and utility were the characteristics of the exhibit from Messrs. W. Poupart & Sons, Marsh Farm, Twickenham, for the firm howed Lilies of the Valley and Rhubarb. The latter was superb, and

included Linnæus, Victoria, Champagne. The Lilies were delightfully sweet and represented the variety Victoria from the open air.

The whole of the central table in the small tent was occupied by Messrs. J. Carter & Co., High Holborn, with a varied and beautiful assortment of flowers and vegetables. The former are referred to in another paragraph, and we shall therefore only note the latter at this point. The product included Carter's Telephone, Daisy, and Early Morn Peas, Holborn Masterpiece Bean, Earliest of all Cucumber, First Crop Potato, Duke of York Tomato, Blenheim Orange Melon, Early Forcing Turnip, White Advancer Bean, and Royal Osborne Cucumber.

Certificates and Awards of Merit.

Begonia Thos. Hall (J. Laing & Sons).—A magnificent double variety. The colour is soft salmon in the outer portion and blush within (award of merit).

Begonia Lord Roberts (T. S. Ware, Ltd.).—A superb double variety. The basal colour is white with a broad scarlet margin (award of merit).

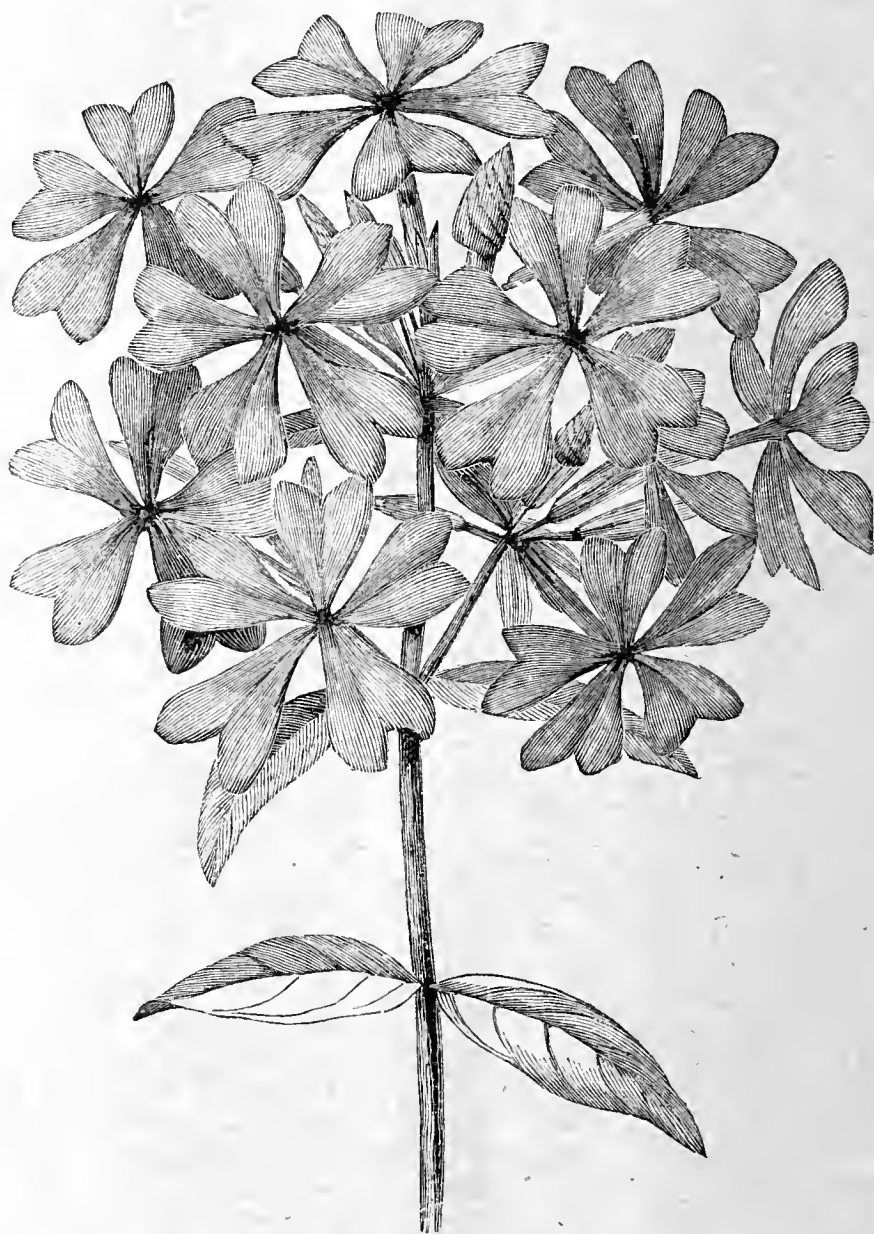


FIG. 119.—PHLOX CANADENSIS (DIVARICATA). See page 436.

Begonia Mr. W. G. Valentine (T. S. Ware, Ltd.).—A double scarlet variety; the petals are of exceptional breadth (award of merit).

Bougainvillea Maud Chettleburgh (J. Chettleburgh).—A superb form; the colour is crimson lake (award of merit).

Carnation H. J. Cutbush (W. Cutbush & Son).—This is one of the finest scarlet varieties that have been shown of late. The flower is of the first size, and of splendid substance (award of merit).

Cattleya Mossiæ Ronseleana (de Wavrin).—A handsome variety. The sepals and petals are exceptionally rich rose, and the fimbriated lip is velvety crimson purple with deep yellow on the side lobes (award of merit).

Cattleya Mossiæ Our Queen (F. Sander & Co.).—An almost white variety with faint rose in the sepals and petals. The lip has a broad white fimbriated margin, with central crimson markings and yellow side lobes (award of merit).

Cattleya Mossiæ Wagneri Hassall's var. (Stanley Ashton & Co.).—A chastely beautiful variety that is pure white save for the yellow side lobes (award of merit).

Cymbidium P'Ansoni (H. Low & Co.).—This is said to be a natural hybrid. The sepals and petals are pale green with reddish bars, more pronounced at the base. The lip is milk white with a brown tinge on the front portion (award of merit).

Cypripedium Mary Beatrice (Charlesworth & Co. and G. W. Law Schofield).—This is said to be a hybrid from *C. bellatulum* and *C. Gowerianum magnificum*. It is intensely dark. The large dorsal sepal is deep claret with dark lines. The petals are claret with black spots and the pouch claret (award of merit).

Edrinthus dalmaticus (G. Jackman & Son).—A charming semi-prostrate growing plant producing a profusion of pale blue flowers (award of merit).

Gloxinia Strain (J. J. Upton).—A strain of decided merit. The flowers have refined appearance with form and good colour (award of merit).

Melon Buscot Park Hero (W. L. Bastin).—This is from a cross between Hero of Lockinge and Imperial Green Flesh. It is a handsomely netted fruit of good flavour, and with green flesh (award of merit).

Lælio-Cattleya callistoglossa excelsa (F. Sander & Co.).—This is the finest variety of this grand Orchid that has yet been shown, and was one of the most striking Orchids in the show (first-class certificate).

Lælia purpurata Littleiana (H. Little).—A perfect purpurata. The sepals and petals are pure white, as is the front portion of the lip. The outer side lobes are crimson, and the throat yellow veined crimson (first-class certificate).

Lælio-Cattleya G. S. Ball (J. Veitch & Sons).—This bigener is from *Lælia cinnabarina* and *Cattleya Schröderæ*. The colour is intense orange (award of merit).

Lælio-Cattleya Massangeana (A. A. Peeters).—This is from a cross between *Lælia tenebrōsa* and *Cattleya Schilleriana*. The sepals and petals are brownish red with green at the base. The lip is deep crimson (award of merit).

Lælio-Cattleya Hérode (A. A. Peeters).—This is from *Cattleya O'Brieniana* and *Lælio-Cattleya elegans Turneri*. The recurving sepals and petals are deep rose. The front of the lip is crimson, and the central portion canary yellow; the throat is crimson (award of merit).

Lilium Thunbergianum Orange Queen (R. Wallace & Co.).—A grand Lilium of which the varietal name accurately describes the colour (award of merit).

Lycaste Ballæ (Charlesworth & Co.).—A superb flower. The sepals are dull maroon; the petals are brighter and the lip is white almost obscured by crimson spots (award of merit).

Odontoglossum Rolfeanum Optimum (Ch. Vuylsteke).—A beautiful variety. The colour is white with large and small chocolate spots and blotches. The front portion of the lip is pure white (first-class certificate).

Odontoglossum Rolfeanum ardentissimum (Ch. Vuylsteke).—This much resembles the preceding, but the colour markings are purple (award of merit).

Odontoglossum Souvenir de Victor Hye Lebrun (J. Hye Laysen).—This is from a cross between *O. Harryanum* and *O. luteo-purpureum*. Probably the finest Orchid in the show. The sepals and petals are almost wholly brown, the yellowish green only showing occasionally. The front of the lip is pure white and the basal portion crimson (first-class certificate).

Odontoglossum Victoria Regina (A. A. Peeters).—A small, somewhat starry flower. The colour is white with brown spots and blotches (award of merit).

Odontoglossum Mrs. F. Peeters (A. A. Peeters).—A fine crispum. The white is almost wholly obscured by the brown and rose markings (award of merit).

Odontoglossum crispum Arthur Ashworth (E. Ashworth).—A superb form, though the flower is small. The colour is delicate cream with very large crimson brown spots and blotches (first-class certificate).

Odontoglossum crispum Ernest Ashworth (E. Ashworth).—This is small, but of perfect form. The basal colour is almost obscured by chocolate (first-class certificate).

Odontoglossum crispum Confetti (L. Linden).—This is a singularly beautiful spotted form. The ground is pure white and the spotting reddish chocolate (award of merit).

Odontoglossum crispum radiosum (L. Linden).—A small but handsomely shaped variety. The colour is white clouded with rose in the sepals, and having large reddish-brown blotches (award of merit).

Oenothera speciosa rosea (A. Perry).—This is a dwarf-growing plant that produces numbers of pale rose coloured flowers (award of merit).

Pæony Lady Sarah Wilson (Kelway & Son).—A variety of the tree section. The immense flower is soft rose (award of merit).

Pelargonium Mrs. J. G. Day (H. J. Jones).—An Ivy-leaved variety, with very large crimson scarlet flowers borne in fine trusses (award of merit).

Schizanthus Strain (H. Low & Co.).—A charming strain of compact habit, and very free flowering; the colours generally are light (award of merit).

Tulipa galatica (Van Tubergen).—A yellow coloured species with pointed petals (award of merit).

Tulip Mrs. Moon (Barr & Sons).—A superb cottage Tulip, with rich yellow flowers (award of merit).

Tulip Mabel (Barr & Sons).—A deep rose coloured breeder Tulip of splendid form and substance (award of merit).

Medals and Cups Awarded.

The order in which the names are entered under the several medals and cups has no reference whatever to merit, but is purely accidental.

Gold Medals.—To Sir F. Wigan, Bart., Mortlake (gardener, Mr. W. H. Young), for Orchids; Messrs. F. Sander & Co., St. Albans, for Orchids, Azaleas, &c.; Messrs. J. Veitch & Sons, Chelsea, for Caladiums, Cacti, flowering shrubs, &c.; Leopold de Rothschild, Esq., Gunnersbury House, Acton (gardener, Mr. J. Hudson, V.M.H.), for fruit trees and Water Lilies; Lord Wantage, Lockinge Park, Wantage, for fruit.

Silver Cups.—Messrs. J. Cypher, Cheltenham, for Orchids; Mons. Lucien Linden, Brussels, Orchids; Messrs. Charlesworth & Co., Bradford, Orchids; Mr. Chas. Turner, Slough, Roses, Pelargoniums, Carnations; Messrs. J. Carter & Co., Holborn, vegetables, Calceolarias, &c.; Messrs. Barr & Sons, Covent Garden, Tulips, herbaceous plants, &c.; Messrs. W. Cutbush & Sons, Highgate, topiary work, &c.; Messrs. Fisher, Son & Sibray, Sheffield, stove and miscellaneous plants; Messrs. Hugh Low & Co., Enfield, N., Orchids and new plants; Messrs. Paul and Son, Cheshunt, Roses, cut flowers, and Bamboos; Sir Chas. Pigott, Bart., Slough, Palms and Crotons; Messrs. R. Smith and Co., Worcester, Clematis and Roses; Messrs. J. Peed & Son, Norwood, S.E., Caladiums, Gloxinias, &c.; Messrs. W. & J. Birkenhead, Sale, Ferns; Messrs. J. Hill & Sons, Edmonton, Ferns; Sir J. Pease, Bart., M.P., Guisborough, fruit; Messrs. T. Rivers & Son, Sawbridgeworth, fruit trees; Messrs. G. Bunyard & Co., Maidstone, fruit; Messrs. W. Paul and Son, Waltham Cross, Roses and Rhododendrons; Mr. T. S. Ware, Ltd., Feltham, Begonias, herbaceous plants; Messrs. H. Cannell and Son, Swanley, Cacti, Cannas, plants, &c.

Silver-gilt Flora Medals.—To Messrs. Stanley Ashton & Co., Southgate, for Orchids; W. A. Gillett, Esq., Orchids; Mr. H. J. Jones, Lewisham, Begonias and cut flowers; Mr. W. Rumsey, Waltham Cross, Roses; Mr. Amos Perry, Winchmore Hill, hardy perennials; Messrs. G. Jackman & Son, Woking, Clematis and hardy perennials; Mr. B. R. Cant, Colchester, Roses; Messrs. R. & G. Cuthbert, Southgate, Azaleas; Mr. M. Prichard, herbaceous plants; the Guildford Hardy Plant Nursery, Guildford, alpine; Mr. H. B. May, Edmonton, foliage plants and Roses; Messrs. J. Waterer & Sons, Bagshot, Rhododendrons; R. I. Measures, Esq. (gardener H. J. Chapman), insectivorous plants; the Duke of Northumberland, Nepenthes; Messrs. J. Cheal & Sons, Cacti, &c.; Messrs. Wallace, hardy plants and Lilies; Messrs. Kelway, Pæonies, &c.; Messrs. Sutton, Calceolarias; Mr. J. Russell, trees and shrubs; Mr. J. Watkins, Apples; Leopold de Rothschild, Esq., Ascott, Leighton Buzzard (gardener Mr. J. Jennings), Carnations.

Silver-gilt Knightian Medal.—To A. Henderson, Esq., M.P., for fruit and vegetables.

Silver Flora Medals.—To Mr. W. Iceton, for decorative plants; Messrs. Laing, Maples and stove plants; Mr. T. Jannock, Lilies of the Valley; Mr. W. Poupart, Lilies of the Valley; Messrs. Cripps, Maples; Mr. R. Green, Crotons; Messrs. B. S. Williams, Orchids; Ludwig Mond, Esq., Orchids; Mr. G. W. Piper, Roses; Messrs. F. Cant & Co., Roses; Messrs. Hogg & Robertson, Tulips; Messrs. W. H. Rogers, Rhododendrons; Messrs. J. James & Son, Cinerarias; Messrs. Webb & Son, for Begonias, Gloxinias; Lord Gerard, Carnations; Messrs. Backhouse, Orchids, Alpines, &c.; Messrs. Fromow, Maples.

Silver Knightian Medals.—To Mr. S. Mortimer, for Cucumbers; Mr. W. Godfrey, Asparagus; Mr. Harwood, Asparagus.

Silver Banksian Medals.—To Marquis de Wavrin, for Orchids; Messrs. Dobbie, Sweet Peas; Mrs. Bodkin, Cacti; Messrs. Young, Cacti; The Misses Hopkins, herbaceous plants; Mr. P. Erseleus, Petunias; Messrs. Wavren, Astilbes.

It is our pleasing duty in drawing this report to a close to testify once again to the excellence of the arrangements. In an exhibition of such magnitude as this the work entailed is enormous, and the managers may rest content in the knowledge that their admirably carried out duties have met with general approbation. Everyone should be grateful to the Rev. W. Wilks and Messrs. Frank Reader, S. T. Wright, and T. Humphreys for their unfailing courtesy and anxiety to afford information on such a peculiarly trying occasion as this.



Orchids at Hollycombe.

SOME of the most profusely flowered specimens of *Dendrobium nobile* and its variety *Wallichianum* I have had the pleasure of seeing are in the possession of J. C. Hawkshaw, Esq., Hollycombe, Liphook. The entire collection is not extensive, the majority of the plants being accommodated in one house, erected especially for them a few years ago; but the rude state of health and the luxuriant growth of several of the different species contained therein, amply demonstrated the pleasure which can be obtained in a mixed collection cultivated in one structure.

The *Dendrobiums* were, however, at the time of my visit arranged in the form of a bank in the spacious conservatory adjoining the mansion. There was a Palm in the background set in a groundwork of *Adiantum cuneatum*, while here and there small plants of *Cocos Weddelliana* were judiciously interspersed, and added greatly to the effect. One specimen was superb, and a credit to Mr. Silcock the courteous gardener and grower of these *Dendrobiums*; it measured 4 feet in diameter, while closely studded on the several dozen well-matured pseudo-bulbs were upwards of 1100 blooms. In close proximity was another example with fully 1000 flowers; the latter was growing in a 10-inch pot; several others were carrying hundreds of fully expanded blossoms.

These specimens I learnt were young offsets made up in their present flowering receptacles three seasons ago. These, in the opinion of Mr. Silcock, considerably outdistance plants made up and repotted in the usual way. It is essential to exercise great care in watering until the offsets are established; afterwards they are kept at the warmer end of the house and are accorded tropical treatment in the form of copious supplies of water both at the root and in the atmosphere. Occasionally during the season they are given a little weak liquid manure, made from fowl manure, alternated with soot water, in order to stimulate the growth. As the growths mature the plants are removed to cooler quarters, every care being taken to insure the thorough ripening of the pseudo-bulbs, as on this depends satisfactory flowering. By attending to a rotation of plants, Mr. Silcock experiences no difficulty in maintaining a succession of well bloomed plants from January until June, those for the former period being afforded a very slight rest prior to restarting, while others are retarded and brought forward as required.

In the same house were well-grown specimens of *Oncidium sphacelatum grandiflorum*, with some two dozen lengthy spikes of pretty chocolate and yellow blossoms; a well-flowered plant in a basket of *Odontoglossum citrosum*; the somewhat rare *Cattleya dolosa*, *Cypripedium villosum*, *C. Sedeni*, and *C. Lawrenceanum*. *Laelia superbiens*, which is rather difficult with some growers to grow into fine plants, was in good condition at Hollycombe, having carried a dozen spikes 5 feet in length with from twelve to twenty blossoms on the summit of each. *Dendrobiums densiflorum*, *thyrsoflorum*, *Pierardi*, *chrysanthum*, and *moschatum* were luxuriating, while the common *Epidendrum evectum* also occupied a place. These are a few of the Orchids that were particularly noted on the occasion of my visit, though several other species find a congenial home in this structure.

Of the numerous other glass houses it is not my purpose to speak at this moment; suffice it to say the occupants of each fully justified the care and skill bestowed on them. Mention must, however, be made of the fine specimen of *Camellia alba-plena*, planted out in a cool house. Though of a great age—i.e., one hundred years—it was moved from the conservatory some eight years by Mr. Silcock, and replanted in its present quarters; it annually produces some thousands of its chaste blossoms from November to April. Equally at home is another tree of the same variety, planted out of doors in a southerly position. The choice specimens of *Coniferae*, flowering shrubs, *Rhododendrons*, *Azaleas ponticum* and *mollis* I must pass with a word, much as they deserve extended mention.—GEO. HAGON.

At Chelsea.

ONE of the facts in connection with the Temple Show that is regretted yearly is that Messrs. J. Veitch & Sons, Ltd., do not exhibit from their unrivalled collections of Orchids at Chelsea, Langley, and Feltham. But so it is. Their exhibit is made up at the Royal Exotic Nursery at Chelsea, and what the visitor to the Temple Show

loses the visitor to the King's Road establishment gains. Everyone who goes to Chelsea at any time expects to find at least a few Orchids in flower, and no one need fear disappointment; it is, however, just at this time that each house becomes more than ordinarily beautiful, for on each hand there are flowers of every conceivable size, form, and colour. Let those, therefore, who can find the time make tracks for Chelsea to see Orchids in a dozen houses, and find how well these plants may be made to thrive even in this unfavourable part of our smoky metropolis. All those in flower are not grown there of course, but the majority are, and that is sufficient to show the capabilities of the grower, Mr. Harris, the plants and the climate.

For very many years the first Orchid house running at right angles to the long walk has been filled with *Odontoglossums*, particularly crispums; but here, as elsewhere, "the old order changeth," and the principal portion of the collection is now conspicuous by its absence. The plants have been transferred to Feltham, hence the firm has now Orchids there, as well as at Chelsea and Langley. In place of the *Odontoglossums* we find *Cattleyas* and *Laelio-Cattleyas* in excellent variety and abundant quantity. There are large numbers of *Cattleya Schröderæ* just passing their best, but still remaining sufficiently fresh to prove the presence of more than a few varieties of exceptional quality. *C. Philo* is a hybrid from *C. Mossiæ*, and *C. tricolor* and varies in colour from soft blush to deep rose-purple. *Laelia latona* is really superb in its brilliant colours, as indeed are the bright yellow *Laelio-Cattleya Zephyra*, with its crimson lip; *L.-C. Wellsiana albida*; *L.-C. Hyeana*, particularly rich; and *L.-C. Daphne*, which was obtained from *Cattleya Mossiæ* and *Laelia elegans*.

In the structure running parallel with the main walk are some splendid plants of *Oncidium concolor*, which have made a wonderfully attractive display during the past few weeks. This is indeed a charming Orchid when seen in such numbers. *O. Marshallianum*, too, with its great spikes, is in fine form, and lends good aid in adorning the house. Of *Odontoglossums* noted one form of triumphans is particularly good, while several other varieties are little inferior. *O. Halli* is admirably represented, as also is *O. vexillarium*, with the pleasing *O. cirrhosum*. These, with many others, make this house one of the most beautiful in the whole series.

Continuing our tour, we quickly find ourselves amongst the *Dendrobiums* in baskets hanging from the roof, with *Cypripediums* on the side stages, while still further along are numbers of *Phalænopsis*, many of which are in flower. The *Dendrobiums* are not confined to one house, but are comparatively numerous in several. Amongst the most conspicuous are the chastely beautiful *Bensoniæ*, *Alcippe*, and *Euterpe*, with the much showier though not more beautiful *thyrsoflorum* and *chrysotoxum* in the Orchid rockery. *Burlingtonia pubescens*, with its paper white, sweetly perfumed flowers, is worthy of all the admiration that it receives from the many visitors. Several of the *Phalænopsis* are peculiarly pretty, as will be seen from the names of *John Seden* and *Hermione* (a hybrid from *P. Stuartiana* and *P. Luddemanniana*), as well as *P. Manni* and *P. Luddemanniana*, which in colouring are perhaps more quaint than beautiful. *Spathoglottis aureo-Veillardii* and *Zygocolax Veitchii* are pictures that always attract as well for their distinctive form as for their beauty.

The most striking *Cypripedium* is *Lawrenceanum*, whose handsome flowers stand boldly above the equally handsome leaves. Of chaster beauty is *C. niveum*, with its milk white delicate looking flowers. Of the others observed the best were *Fraseri*, *Euryalæ*, *Mastersianum*, *Joseph Chamberlaini*, *callosum*, *ciliolare*, and *Ædon*. Returning to the Orchid rockery we find *Bifrenaria Harrisonæ*, *Epidendrum langleyense*, whose yellow flowers last in good condition for quite two months, *Cymbidiums Lowianum* and *eburneum*, with *Cypripedium Rothschildianum*, and *Oncidiums pulchellum*, *sarcodes*, *ampliatum*, *pulvinatum*, and *divaricatum*. The two latter are very similar in the form of the branching spikes, but the first named produces its paler coloured flowers somewhat later than *O. divaricatum*.

It would be no easy task to say how many persons have seen and admired the great *Cattleya* house, which is usually at the present period of the year the home of hundreds of flowers. This season, however, has been very unfavourable to the development of the blooms, and as a consequence the most beautiful moment of the display will be some two or three weeks later than the average. There are the grand plants with considerable numbers of flowers, every one of which is worthy of close examination. The time and opportunity for particularisation are, however, not now, and we must content ourselves with the bare announcement that *Cattleyas Mendeli*, *Lawrenceana*, *citrina* are splendid, and that *C. Mossiæ* is somewhat later. *Laelia purpurata*, which is generally superb, is represented by a few excellent flowers, both light and dark in hue, and hundreds of sheaths which will probably produce many flowers worth the seeing. These are not all the Orchids in flower at Chelsea that are deserving of mention, but they must suffice to indicate to readers of the *Journal of Horticulture* how diversified and interesting is the entire display.—ORACHE.

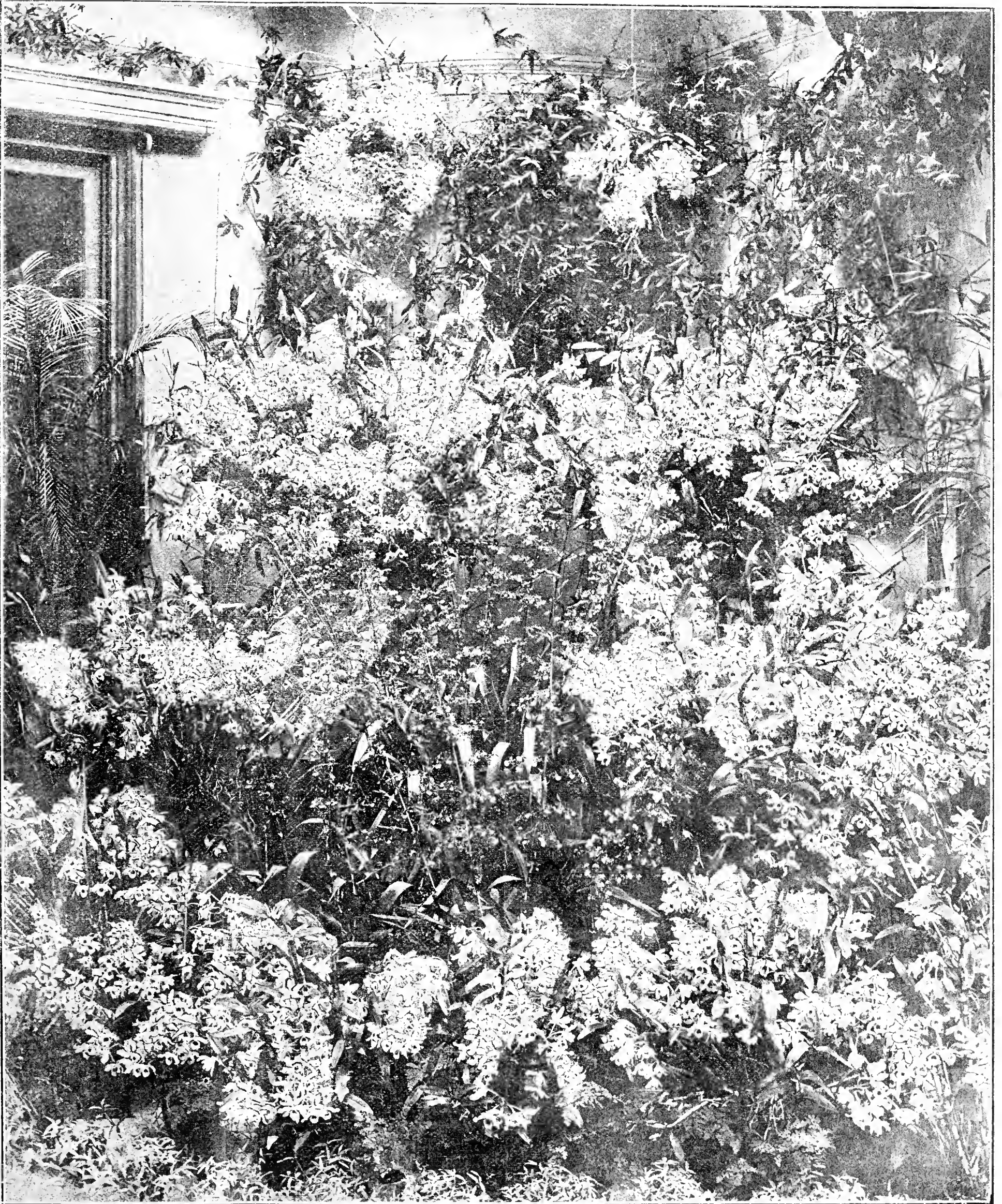


Photo by West,

High Street, Godalming.

DENDROBIUMS AT HOLLYCOMBE.



The Royal Horticultural Society.

National versus Metropolitan.

SPEAKING for the provinces, I think it can be said, without risk of serious disputation, that the greatest of all desires is that the Royal Horticultural Society should be much more broadly national than it is now, and less metropolitan. In assemblages of nurserymen and gardeners at the greater provincial shows conversation seems inevitably to centre on what is referred to as the "London Society." It is conceded that the headquarters of the Royal Horticultural Society must be in London, but at the same time what is described as a "London policy" is strongly objected to.

There is no sympathy among provincial Fellows with the idea that the society should devote its attention and means primarily to London shows, at which, in the very nature of the case, distant cultivators cannot exhibit on anything approaching equal terms. Little or no objection is heard to one great summer plant and flower show, as in the Temple Gardens, and one autumn fruit show yearly, as at the Crystal Palace. These are regarded as exhibitions of a national character, and visitors from various parts of the country are glad to attend them. The provision of a "Hall," however, that would drain the society of its resources for a series of shows throughout the season is a proposal that is only mentioned in provincial meetings of horticulturists to be condemned.

The present means for exhibiting new or rare plants, flowers, and fruit are held to be sufficient, and descriptions of such exhibits are read with pleasure in the gardening press; but no such pleasure is felt in respect to "displays" of the Covent Garden order, and which are neither new nor rare. Many country Fellows of the society are strongly of the opinion that no products, other than of a novel or instructive character, should be placed before the public at the society's expense, but that a charge should be made for the space occupied, as is done by the Royal Agricultural Society. If the matter were put to the vote of all horticulturists of standing in the kingdom as to the form in which the resources of the Royal Horticultural Society should be applied the verdict would doubtless be in favour of an adequately equipped and well managed garden in the country, and of a building in London sufficiently large for the placing of new, novel, or exceptionally meritorious products before the society's committees, and of such visitors who are specially desirous of keeping themselves up to date horticulturally. In other words it would be very much preferred that the meetings be educational rather than commercial in character, and national instead of metropolitan.

The advocates of a costly hall, which might bring the society to ruin, are, without so thinking, tending to lower the status of the Royal Horticultural Society by reducing it from a great national scientific and practical institution to the character of a London club.—A NORTHERN FELLOW.

A National Victoria Rose Day.

BOTH the communications of Mr. William Paul, on page 395, and of "A. C.," page 407, must have been perused with interest by many readers. Years ago I wrote in these columns—"The Rose is the national emblem of this country. When and by whom it was established in that prominent position I know not, but this I know, that it is worthy of the country, and, I think, also the country is worthy of the Rose." I shall be sure of this last proposition if a National Rose Day is established in honour of the venerable and much revered head of the nation. The greatest horticulturist in the Cabinet, Mr. Chamberlain, said only the other day—"The Queen has during the last few months added, if it were possible, to a popularity greater than that of any other monarch in history." We all know in what way, and by a graceful floral expression of devotion to such a monarch, would not the nation be also honouring itself?

The flower for this purpose must be the Rose. No other possesses in combination the same qualities of variety, beauty, fragrance, and hardiness. Whether, as from what Mr. William Paul has said seems probable (and there is no greater authority), the Rose was installed in its supreme position by the Romans or not, its right as England's emblem is admitted, and no other flower could be fittingly chosen for the purpose suggested by "A. D." a month ago, and enlarged upon on page 343. It is hoped that the idea, since it has received the approval of eminent rosarians, will be carried out.

"A. C." is presumably an antiquarian, and has a certain veneration for St. George. There is really no occasion to "throw him overboard." To me the Saint appears a misty sort of celebrity. In any case the honour of "paper flowers" would be of a very artificial, not to say shoddy, character. He is welcome to them; while to celebrate his

memory on April 23rd on a national scale, it would have to be done mainly by foreign Roses, and surely this would be somewhat of an incongruity for the "patron saint" of England!

The right day for a national Rose festival is the Coronation Day of Queen Victoria, whose worth and memory can only be appropriately celebrated by real genuine English-grown Roses. In nine years out of ten these may be had on 28th of June in every garden in the land that is capable of growing Potatoes, while millions could be supplied by commercial growers to meet the demand in large cities and towns.

This floral demonstration of the esteem in which her Majesty is held could be shared in by all creeds, parties, ranks, and classes in the community. It is worthy of thought, and might form a theme of discussion and collective expression of opinions in gardeners' associations and other meetings. It has even been suggested as worthy of consideration by the Royal Horticultural Society, and either this, or the National Rose Society, or both, might be effective agents in carrying it out. On their recommendation at the right time the general Press would be likely to make the project so widely known as to practically insure a successful response.—V. M. H.

Stealing Flowers at Shows.

MR. DE BARRI CRAWSHAY is too moderate in his references (page 415) to the despicable practice of stealing flowers from shows. It is not the first time the matter has been mentioned in the public press, and unhappily it probably will not be the last. It is, however, difficult to suggest a certain preventive of such malpractices. I personally should not have thought that anyone interested in growing Orchids—the aristocracy of the floral kingdom—would have sunk so low as to steal a single flower; but I was evidently in the wrong in assuming that the culture of a choice plant could bring the minds of all people up to a parallel level.

While no general principle seems possible, I think that the management of the Orchid section of the Drill Hall shows of the Royal Horticultural Society are of such nature as to favour the chances of a person securing a flower surreptitiously, and I think a change might be made in this individual case. One frequently sees the messengers, who fetch plants from the tables for the inspection of the committee, drop them down anywhere on their return, irrespective of their proper positions. Any person may then lift a plant, to put it in its rightful place, which gives opportunity number one. Then there does not appear to be any rule as to who should cut the flowers for the artist to paint. I have seen at least four different individuals undertake the task, which in my opinion should be strictly assigned to one person, or in his absence to a deputy, specially appointed by the chairman of the committee. All of those I have seen have been members of the committee, with whom I have the privilege of personal acquaintance; but there are others whom I do not even know by sight, hence if I saw someone taking a flower, I might reasonably assume that he belonged to the latter section. Thus we find opportunity number two, and probably there are several others.—AN OUTSIDER.

The Chiswick Trial of Tulips.

IN his eagerness to pose as a critic your correspondent "B. W." (page 417), passes quite beside the mark. He has evidently not read my notes, which he is good enough to acknowledge afford pleasant reading, very carefully, or he would not have gathered therefrom that the varieties named were absolutely the best in cultivation. They were not enumerated as such, but noted simply as having been honoured by the Floral Committee of the Royal Horticultural Society. At the same time, one or two of them are unquestionably superior to any in general commerce, and I would name Maes amongst the singles, and El Toreador amongst the doubles, as examples of this. As for the inclusion by "B. W." of *Tulipa cornuta*, I confess I fail to see the point of it. Species of Tulips were not under consideration in the slightest degree, but varieties of early or Dutch Tulips; but perhaps "B. W." does not grasp the significance of the difference. Let me assure your correspondent that he is not alone in his admiration of Keizers Kroon, in proof of which I would refer him to page 396, where I included this variety with Vermilion Brilliant and Proserpine as indispensable. Surely to state that a variety is indispensable is sufficient praise, without giving the colour of a flower with which every garden boy in the country is familiar.

I must certainly join issue with "B. W." when he questions the utility of a trial of Tulips. Perhaps, however, he prides himself on belonging to that new section of the gardening community which has grown with Mushroom-like rapidity during the past few weeks, and condemns trials *in toto*, and be it understood Chiswick trials in particular! We cannot all sit at home and preen our feathers in the confident self-assurance that we know every single and double Tulip in cultivation, or of any other flower for that matter. We thus, in our desire to learn, hail with pleasure a trial of any plant, fruit, or vegetable, and an inspection always adds to our store of knowledge. Dare I suggest that "B. W.'s" views would have been broadened had he visited, as I did, the Chiswick trial of Tulips with a mind eager to grasp the merits or demerits of the varieties grown?—F. W. H.



A Prolific Tulip Bulb.—I am sending a bulb of Tulip Mon Tresor, which has four blooms. As might be expected, the flowers are somewhat smaller than those on bulbs that produced one bloom only. Mon Tresor is a magnificent yellow Tulip of robust habit, and far superior as a bedder to either Yellow Prince or the Yellow Pottebakker, which are in beds in close proximity.—A. J., *Moor Hall*.

Aberdeen Botanic Garden.—Dr. J. W. Traill, the curator of the Cruickshank Botanic Gardens, Aberdeen, is at present employed in planning the beds, but it will be several weeks before the gardens will show anything indicative of their nature and purpose. Many plants have been received, but they are not yet arranged in the beds. The unfavourable weather during the past winter hindered the work considerably.

Strawberries in Abundance.—Outdoor Strawberries are coming into the English markets from Havre and St. Malo in good quantities. Home grown hothouse fruits have as a consequence, says a daily paper, declined considerably in price, and are being sold as low as 1s. 6d. a pound. It is quite possible that before the month is out they will be down to 1s. The French Strawberries are only partly coloured, but very large quantities may be expected shortly, as this season the crop will be a phenomenal one.

The Flora of Russia.—The St. Petersburg correspondent of a daily contemporary writes:—"An attempt is to be made to compile and publish a detailed account of the flora of the Russian Empire. The work will be divided into four parts, relating respectively to European Russia, Siberia, Turkestan, and the Caucasus with the Crimea. The Emperor has entrusted the directions to Mr. C. J. Korginsky of the St. Petersburg Academy, who will commence with the examination of the flora of Siberia, in aid of which a grant is to be made of 21,400 roubles."

Iris Susiana.—I was much interested in the magnificent specimens of Iris Susiana that were exhibited at the Drill Hall on May 8th by Messrs. T. S. Ware, Ltd. There were about a dozen and a half of flowers, and all were in the most excellent condition. I have many times tried to grow this handsome plant, but so far with little success, as my flowers were puny and inferior in colour. I have tried many systems on the advice of professional friends, but, so far, with no success. I wish readers of the *Journal of Horticulture* would give the details of any treatment they have found successful, as well for the benefit of others as for myself.—W. R.

Tree Butchers.—The remarks under this heading, which we take from the "St. Louis Star," are equally true of many London and provincial trees, but we thought they did things properly in America. "There are workmen and workmen in all branches of mechanics. There are competent and incompetent men plying the several trades. It is not the palette and the brush that make the artist, nor yet the paint pot that designates the painter, not the pruning hook, the hatchet, or the saw that speaks of the horticulturist, nor the trowel and the sprinkling pot that tell the story of the florist. In all callings some men excel, and alongside of them others miserably fail. Sir Joshua Reynolds, when asked by a young artist how he mixed his colours, answered, 'With brains.' That is the true touchstone of success in all callings. There is one class of fellows, just now plying their so-called calling in the residence part of St. Louis, who are wonderfully lacking in brains. They call themselves 'pruners.' To judge from their work they would better be called tree butchers—for that is what they have been doing for a week or two back, and are now doing out in the north-west suburbs—slaughtering, murdering some grand and stalwart trees that have stood and faced the storms of many winters. Next, almost, to murdering humanity, it is a crime to mutilate these stately Oaks and Elms. The city should pass a stringent law, requiring each man who professes to be a pruner to hold a license for doing such work, and debar him from receiving such license except upon the presentation of a diploma from a school of forestry, or at least a recommendation from some well known local individual thoroughly versed in 'treeology.'"

The Chestnuts in Bushey Park.—Visitors to Bushey Park on Sunday would be disappointed at the less luxuriant show of bloom in the famous avenue this year. Many of the trees, however, present a beautiful appearance. The cold weather is mainly responsible for this. A huge branch, some 60 feet long, covered with bloom, broke away from one of the largest trees in the park on Friday last, and several persons had narrow escapes from injury.

Rhododendron Thomsoni.—In referring to the Rhododendron garden at Rooksnest on page 419 of the last issue I omitted to mention the grand specimen of Rhododendron Thomsoni, which has recently collapsed. This fact is much to be regretted, as it was a really magnificent plant, and was described by Dr. Hooker as one of the finest he had seen out of doors. The plant grew to a height of 14 feet, and had a diameter of 12 feet; it had lived in the same position without the slightest protection for nearly twenty years, and when in flower was a superb object.—ZINGARI.

Seeds for Ladysmith.—During the worst stage of the siege of Ladysmith the Town Clerk wrote to an Australian gentleman to whom he had been recommended for a supply of garden seeds. Here is the letter:—"Town Office, Ladysmith, Natal, 19th February, 1900, 111th day of siege, 114th of bombardment.—Dear Sir,—Mr. ——— has informed me that if I write to you to apply for a few seeds the request will probably be granted. I simply require a few for my garden. If this could be done I should be very much obliged. We are hoping to get relieved soon. The present situation is very trying, and most of us are suffering from hunger." The Australian seedsman has sent on a variety to the now free-breathing town clerk, enclosing a message of congratulation on his philosophic coolness during a siege.

Briar Root.—The root from which the Briar root pipe is made comes into Leghorn cut into the shape in which it is exported to the pipe manufacturing centres, which are principally, at least as regards Italian Briar, St. Claude in France, Nuremberg in Bavaria, and various towns in Rhenish Prussia and Thuringia. The roots, which are sometimes of a circumference of 2 feet or more, are cut into blocks and then boiled. If there is any defect in the root which has not been discovered before the boiling process, the blocks are bound to split sooner or later. Briar root blocks are cut into about twenty-five different sizes and three principal shapes. The shapes are "Marseillaise," "Relevé," and "Belgian." The first two are the more usual shapes; from the "Marseillaise" blocks are cut the ordinary Briar pipes, which have bowl and stem at right angles, "relevé" blocks are cut into a shape for converting into hanging pipes, and "Belgian" blocks, for which there is only small demand, are shaped to fashion into pipes which have bowl and stem at an obtuse angle. A considerable quantity of blocks is sent to the United States of America, but apparently none to the United Kingdom.

Turf Walks in Gardens.—When I recently told Mr. Bowerman that I should call and see him at Hackwood, he replied in his characteristic way, "We have nothing to show you." Well, when I visit a garden I want no one to play the showman. I can always see for myself all that is good to see, and sometimes that which is not good. But at Hackwood everything when I looked in there on the 12th was of the former order, and notably the delightful turf walks of the great kitchen garden. I cannot conceive of any form of walk being neater, pleasanter, or more attractive in a kitchen garden than those at Hackwood, and in that great garden there is not an inch under gravel. Readily mown and edged, very smooth and firm, nothing could be nicer to walk or to look upon. One wonders why, after seeing how admirably turf walks answer at Hackwood, such walks are not found in many gardens. It was not less an interesting feature of this fine kitchen garden that not a weed was to be seen on it. Every part was as clean as could be. Crops in every direction were coming on admirably, though, like all else, rather late, for the situation is a somewhat cold one. The walls, and they are extensive, are capitally furnished. No trees could be better. What interest would attach to the judging of such a garden in competition with many similar ones on the same lines that cottage gardens are judged? Hackwood garden would indeed be hard to beat. It is now, and will be for some time, well worth a visit. The same excellent culture found outside is seen in the houses. The trees in the park and pleasure grounds are magnificent, and just now that they are clothed in their new leafage are most beautiful. There are few southern places that can excel Hackwood Park.—INSPECTOR.

NOTES & NOTICES

Recent Weather in London.—The latter portion of last week was not generally so cold as the preceding portion. On Saturday it was dull and threatening, and cultivators were hoping for a warm rain, which is much needed on dry soils. Sunday was warm with dull and bright intervals. On Monday it was decidedly warmer, but a rather high wind lifting clouds of sharp dust made walking somewhat unpleasant. During the small hours of Tuesday morning rain fell heavily, and continued in showers throughout the day. On Wednesday the showers were frequent and very heavy.

The Gardeners' Royal Benevolent Institution.—The committee has great gratification in informing the readers of the *Journal of Horticulture* that H.R.H. the Prince of Wales has graciously consented to succeed the late Duke of Westminster as president of the institution, and that H.R.H. the Princess of Wales and T.R.H. the Duke and Duchess of York have graciously consented to become patrons.

An Indian Hailstorm.—Darjeeling would seem to be particularly unfortunate in the matter of meteorological visitations. The correspondent of "Indian Gardening" there, writing on the 11th ult., says:—"You will be sorry to hear that we have had another disaster in Darjeeling; and from a gardening point of view, worse than that of September last. On Monday evening (9th ult.) we had a fearful hailstorm, which, although it did not last ten minutes, did an incredible amount of damage to vegetation and glass. The annuals, for instance, are battered out of recognition, while even Conifers had whole shoots knocked off. The Chrysanthemums and other perennials are mere sticks, and the Roses have had whole shoots taken off. The houses in Darjeeling present a woebegone appearance, as all windows with a westerly aspect are wrecked. Not in the memory of the oldest inhabitant has such a severe hailstorm occurred. Many of the hailstones were as large as eggs, and none smaller than walnuts. One can estimate the force with which the hail must have fallen, from the fact that over thirty panes of thick glass in the large conservatory at the Botanic Gardens are smashed. I had thought of sending you a list of plants in flower here, but—they are not in flower now!" A hailstorm such as this visited Simla in October, 1884, and the hailstones lay on the ground in some of the sheltered spots for nearly three weeks after the storm!

Carpet Bedding.—I observe from a pamphlet to hand from those enterprising florists Messrs. Cannell & Sons that they still believe in carpet bedding, as not only does the little book give numerous designs, but instructions as to what plants should be utilised in the filling of the beds. It would therefore seem as if carpet bedding is not yet quite dead, although it is rapidly becoming extinct. I notice that in many of our public parks and gardens where summer bedding is so admirably displayed, scarcely a single carpet bed is now to be seen. There can be no doubt that beds of this description have been popular in the past; but they absorb an immense number of plants, and need an excessive amount of attention compared with the results obtained in keeping these plants in rigid lines and quite dwarf. Practically carpet bedding may be described as the most artificial form of flower gardening to be found in horticulture. Certainly it is on a par with the hard formal trimmed hedges, topiary shrubs and trees, hard cold stone steps, and walls, statuary, vases, and other adjuncts still found in gardens modelled on the Dutch style. But there has been during the past twenty years a great secession from this description of gardening. Formality and stiffness have had to give place to natural formation and growth, and the beauty which Nature furnishes to plants, trees, and shrubs is now more generally encouraged and admired. Almost the only absolute element of formality found in modern flower gardens now is the smooth, close-shaven turf, but that is a feature that will never be abjured. Practically it constitutes one of the great charms of our lawn flower gardens. Even those who favour wild or grass gardening enthusiastically, yet like to have the lawn proper kept neat and close-mown. But the summer bedding is now more rugged in outline, more natural in appearance, and generally exhibits a great advance on the old carpet bedding.—A. D.

Gardening Appointment.—Mr. William Coomber, for the past two years and nine months head gardener to the Earl of Wilton at Houghton Hall, Kings Lynn, has been appointed in a similar capacity to the same nobleman at Cockley Cley Hall, Swaffham.

Mr. J. F. Hudson, M.A.—We have to congratulate Mr. J. F. Hudson on his appointment as mathematical lecturer at University College Bristol. This clever son of a clever father has for three years been assistant lecturer at Jesus College, Oxford, and assistant demonstrator of physics in the Oxford University laboratory. Mr. Hudson is a scholar of Jesus College, Oxford; he took first in Mods. in 1893, and first in Greats in 1895.

The Sleep of Plants.—Remarkable experiments were reported a short time back to the Cambridge Philosophical Society by Miss Pertz and Francis Darwin. If a "sleeping" plant is placed in a dark room after its leaves have assumed the nocturnal position, it will "awake" next morning—i.e., assume the diurnal position, in spite of darkness. Still more remarkable, if one-sided illumination causes the leaves to take oblique positions, they will resume such positions on awaking next day, though in darkness.

Jersey Potatoes Saved.—The latest news from Jersey is that after all, Jersey Potatoes will not be so dear this season as was at first feared. The supply will be not far from normal, but as there are indications of an unusually large demand prices may rule high. There have been extensive importations of German Potatoes to supplement the expected deficiency in the British product, one steamer alone landing between 12,000 and 13,000 bags from Hamburg at Goole. These are, of course, last season's products.

The Uses of a Churchyard.—Our clever contemporary "Truth," is responsible for the following:—*Aprpos* of the Ewelme Churchyard case, I have heard a rather good story said to have been told by a former Archdeacon of Suffolk visiting an out-of-the-way parish when the incumbent happened to be away, the Archdeacon was shown round by the clerk. On arriving at the churchyard he found a fine crop of Wheat growing in it. "Dear, dear," said the Archdeacon, "I can't approve of this, I really did not think that Mr. — would have planted Wheat in the churchyard." "That's just what I told parson," replied the clerk. "I says, says I, ye didn't ought to have wheated it. Ye ought to have tatered it."

Linnæan Society.—The Flora of the Andes was discussed at a recent meeting of the Linnæan Society by Mr. H. H. W. Pearson, with special reference to Sir Martin Conway's small collection of plants brought from Illimani, in the Bolivian Andes, in 1898. In consequence of the labours of D'Orbigny, Pentland, Meyen, Weddell, Mandon, and other botanists, the high-level flora of the mountains of Bolivia is better known than that of any other equally elevated region of the Andes. Many collectors have obtained plants in various parts of the Andes at elevations stated to be greater than 17,000 feet. Colonel Hall states that he saw four plants on Chimborazo in 1831 at "nearly 18,000 feet." These were two species of *Draba*, one of which, says a contemporary, was *D. aretoides*, and two composites. Mr. Whymper and others have thrown some doubt upon the determination of this elevation, and it is probable that it was over-estimated. Of forty-six species of flowering plants obtained by Sir Martin Conway, seven are from 18,000 feet or above it, two being as high as 18,700 feet. These, the highest Andine plants on record, are *Malvastrum flabellatum* and *Deyeuxia glacialis*.

Kidderminster and District Horticultural Society.—The above society held its monthly meeting on the 9th inst., under the presidency of C. N. Barr, Esq. The lecturer was Mr. W. H. Wilson of Moor Hall, Stourport, and the subject of the lecture was "The Potato and its Cultivation." Mr. Wilson said he had chosen this subject because it was one of general interest to all members of the society, the Potato plot being the common platform of gardeners. He traced the progress of the Potato from being a vegetable curiosity to a staple article of food. He advised deep cultivation in the autumn, giving a good dressing of partially decayed farmyard manure, not as food but to keep the soil in a good condition. At the conclusion of the lecture, on the proposition of the chairman, seconded by Mr. Coombs, Hagley, a hearty vote of thanks was passed to Mr. Wilson. The distribution of the Tomato plants (from seed supplied by the Royal Horticultural Society, with which the above society is affiliated), and raised by Mr. Whicker, F.R.H.S., one of the hon. secs., took place. The next monthly lecture will be on "Dahlia Culture," by Mr. Hawkins of Mitton, Stourport.

Coventry Chrysanthemum Society.—The schedule of this society for the show to be held in the Market Hall, Coventry, on November 6th and 7th is now before us, and will be forwarded to intending exhibitors on application to the secretary, Mr. J. Cooper, 31, Foleshill Road, Coventry. It is not a large schedule, but the thirty-one classes are sufficiently diversified to make an admirable show, provided the entries are as strong as they ought to be. There are four divisions subject to the usual restrictions. A sum of £12 is offered in three prizes for a 50 feet group of Chrysanthemums, this, with others for cut blooms, being open to all comers. The cottagers' section is mainly devoted to vegetables.

Royal Botanic Society.—The exhibition at Regent's Park on Wednesday, 16th inst., was like its immediate predecessors, a very small one. The authorities had vacated the usual position for the summer show under canvas, and the exhibits, which were of course mainly from trade growers, found ample accommodation in the corridor and conservatory. Amongst the more prominent exhibitors were Messrs. J. Laing & Sons, Forest Hill, who showed miscellaneous foliage and flowering plants; Messrs. J. Carter & Co., High Holborn, who contributed *Cineraria stellata* in considerable variety; Messrs. Barr and Sons, Covent Garden, who sent Tulips in fine form; Messrs. J. Cheal and Sons, Crawley, who exhibited sprays of flowering trees and shrubs; and Messrs. W. Paul & Son, Waltham Cross, and B. R. Cant, Colchester, both of whom were represented by magnificent Roses. Fruit trees in pots were staged by Messrs. T. Rivers & Son, Sawbridgeworth, and needless to say they were splendidly grown.

Agricultural Holdings Bill.—A special meeting of the council of the Central and Associated Chambers of Agriculture, called for the purpose of discussing the Agricultural Holdings Bill, took place on Friday afternoon in the Westminster Hall Grand Committee Room. Mr. V. Cavendish, M.P., presided, and there was a large attendance. Mr. Lipscomb, chairman of the Agricultural Holdings Act Committee, moved a resolution expressing a hope that the Bill now before Parliament would be amended in accordance with the recommendations adopted by the committee in June, 1894, and reaffirmed in the report of the committee adopted by the council on the 3rd of April last. The more important of the recommendations referred to are as follows:—1, That compensation for the unexhausted value of permanent pasture laid down by the tenant should be secured to the tenant; 2, That an outgoing tenant should be entitled to receive compensation representing the unexhausted value to an incoming tenant of two years' and older seeds, if a good plant, and if the land be clean and in good heart; 3, That power should be given to arbitrators to award compensation for long-continued use of manures; and 4, That both landlord and tenant should be required to give twenty-eight days' notice of claims, allowance being made for amendment of the landlord's claim in respect of dilapidations to buildings. Professor Long seconded the motion. The motion was carried by a large majority, and the meeting shortly afterwards terminated.

Royal Meteorological Society.—The first afternoon meeting of the present session was held on Wednesday the 16th inst. at the society's rooms, 70, Victoria Street, Westminster, Dr. C. Theodore Williams, president, in the chair. A most interesting paper was read on "The Witshire Whirlwind of October 1st, 1899," which had been prepared by the late Mr. G. J. Symons, F.R.S., a few days before he was stricken with paralysis. This whirlwind occurred between 2 and 3 P.M., commencing near Middle Winterslow, and travelling in a north-north-easterly direction. The length of the damage was nearly twenty miles, but the average breadth was only about 100 yards. In this narrow track, however, buildings were blown down, trees were uprooted, and objects were lifted and carried by the wind a considerable distance before they were deposited on the ground. Fortunately the greater part of the district over which the whirlwind passed was open down, otherwise the damage, and perhaps loss of life, would have been considerable. At Old Lodge, Salisbury, the lifting power of the whirlwind was strikingly shown by several wooden buildings being lifted up and dropped down several feet north-west of their original position. At a place eighteen miles from its origin the whirlwind came upon a rick of Oats, a considerable portion of which it carried right over the village of Ham, and deposited in a field more than a mile and a half away. A paper by Dr. Nils Ekholm of Stockholm was also read on "The Variations of the Climate of the Geological and Historical Past and their Causes."

The Weather in Dublin.—The climate of the Irish metropolis for the current month is far from being pleasant, although the earlier days were fine, but cold with sharp east winds. Latterly the days have been summerlike. The rainfall was slight. The advent of summer is discernible in the quickening pulses of the forests and hedges. In the gardens the impressions are deeply shown, as well in the rock garden as in every other section of the completely equipped estate. The orchards are in very good trim, and the trees in nearly all parts of the county around the metropolis having been heavily laden with blossoms. The vegetable garden is just beginning to show the results of more genial conditions.

Flying Beech Leaves.—At about four o'clock on the afternoon of Sunday, April 1st, my attention was arrested by the fall of numbers of dried Beech leaves. On looking up I found that the leaves were passing in large numbers from east to west, and as high as the limit of vision. Many appeared to be mere specks, whose height and motion promised them a journey of some miles at least. The shower continued for perhaps twenty minutes. The fall was noticed by many persons here, says a Wallingford writer in "Knowledge," who were unable to account for it, as there are no Beech trees within two miles at nearest. Probably the leaves had been raised by a whirlwind, and at a very considerable distance east of this neighbourhood. A friend, who was some three miles east of my station, witnessed the phenomenon, and states that by the aid of a field-glass he could see leaves still higher than those visible to the naked eye and yet felt that he had not even then reached the highest. The morning had been clear and bright, but at the time of this occurrence the east sky was covered with a thick thundery-looking haze. There was no surface wind. Barometer steady at about 30.2 inches.

Disastrous Weather.—The cold snap and the searching north-easterly wind that accompanied it have caused havoc in the orchards and fruit gardens. It is not much satisfaction to know that the visitation was by no means exceptional, nor does it tend to minimise the unpleasantness of the midwinter atmosphere to be assured by the authorities at the Meteorological Office that the present is by no means the most severe that has been experienced in May, and that the changes in 1891 and 1895 were much more violent, and caused enormous destruction in orchards and fruit gardens. The reports from the fruit-growing districts indicate that the frost has left its mark. In Kent the Plum blooms have suffered badly, and in places Strawberries have been severely nipped; but Apples and Cherries are fortunately said to have escaped. Wind and frost have seriously damaged the fruit crop in Oxfordshire. The outlook in Mid-Sussex is gloomy. Blight is setting in in Currants and Cherries, Strawberries are black, Pear blossoms are falling, and Plum blooms are turning yellow. Apples and Gooseberries, however, are unaffected, and Peaches grown in the open are well set. In the Windsor district both flowers and fruit are suffering. The Queen's gardens, however, are sheltered, and very little damage is reported, despite the bitter weather. Mr. Hugh Clements, the well-known weather prophet, says the summer will be a remarkably fine one. During July there will be a drought throughout the British Isles, with the exception of the west of Ireland. September will be a wet month.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1800.										
May.										
Sunday.. 13	N.E.	deg. 46.7	deg. 41.0	deg. 48.9	deg. 41.5	ins. —	deg. 50.8	deg. 51.0	deg. 49.8	deg. 39.1
Monday..14	E.N.E.	46.4	40.1	54.6	37.5	—	49.5	50.6	49.8	30.4
Tuesday 15	E.N.E.	50.1	42.6	56.0	38.5	—	49.9	50.4	49.8	30.8
Wed'sday 16	E.N.E.	48.7	43.5	56.3	33.3	—	49.7	50.2	49.6	22.1
Thursday 17	E.N.E.	45.8	41.2	63.5	42.6	—	50.8	50.4	49.6	41.1
Friday .. 18	N.E.	54.4	47.2	55.3	46.5	—	53.2	50.9	49.8	51.5
Saturday 19	N.E.	49.0	41.7	57.8	41.8	—	51.3	51.2	49.8	38.5
MEANS ..		48.7	42.5	56.1	40.2	Total —	50.7	50.7	49.7	34.8

The weather during the week has been dull and cold. No rain has fallen since the 11th inst.



Rose Show Fixtures in 1900.

- June 13th (Wednesday).—York †
 „ 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
 „ 28th (Thursday).—Canterbury, Colchester, and Isle of Wight (Ryde)
 „ 30th (Saturday).—Maidstone and Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
 „ 4th (Wednesday).—Croydon, Ealing, Farningham, Hereford, Reigate, and Tunbridge Wells.
 „ 5th (Thursday).—Bath, Norwich, and Sutton.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham.
 „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
 „ 13th (Friday).—Ulverston.
 „ 14th (Saturday).—Manchester, and New Brighton.
 „ 18th (Wednesday).—Cardiff* and Carlisle.
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne.†
 „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Ethel Brownlow.

A CHARMING bloom of this Rose at a recent Drill Hill meeting tempted one to try again in its culture. With us it was so unsatisfactory in growth that we discarded it. The most remarkable thing to form its great beauty is the substance of the petals. They are large, shell-like, and wonderfully thick. Its tints of flesh, rose, and yellow form a delightful combination. But Roses like this, Cleopatra and a few others, are not easy to succeed with, at least out of doors. I have read a description of a Rose—Horace Vernet—"that it is worth growing by the acre to obtain one perfect flower." Life, however, is too short for such Rose culture.

Bessie Brown.

At the exhibitions of the past year or two I had been struck with the beauty of this new variety as exhibited by its raisers, Messrs. A. Dickson and Sons, but as recently seen from pot plants I am not so enamoured. The petals appear wanting in substance, they are papery, and the white is a dead-looking tint. It may be, of course, that other growers than the raisers have not had time to obtain plants sturdy enough to give the blooms in their perfect phase. Somehow, this is not the only Rose that has failed to come up to expectations, after seeing it so fine at first. Has any reader been able to grow Margaret Dickson so grand as it was when first exhibited by the raisers a few years back? Or the three Marchionesses—Downshire, Dufferin, and Londonderry? I must confess they seldom please me, except in the matter of vigorous growth, which leaves little to be desired. Do they resent any but the Irish soil and climate which gave them birth?

The most satisfactory of the Roses raised in North Ireland by A. Dickson & Sons with us on a light soil is Mrs. R. G. Sharman Crawford. This grows and flowers beautifully, and is quite a favourite. Mrs. W. J. Grant is also fine. One might find fault with its want of vigour, but the exquisite blooms in any stage of development are so lovely that one's only thought is to plant more of it every year.

L' Ideale.

This variety is charming under glass. The habit of the plant is rampant, and when once established fills a considerable space in a short time. The combination of tints in the blooms makes it a most interesting sort; and in the bud state its shape is excellent. It must not, however, be thought a show Rose, the blooms are too small for this; but its distinct character in the way of colour makes it a Rose worth growing.—SPECIALIST.

Gardeners' Royal Benevolent Institution.

Anniversary Festival Dinner.

THE sixty-first anniversary festival dinner of the Gardeners' Royal Benevolent Institution, which was held in the Whitehall Rooms of the Hôtel Métropole, under the presidency of the Duke of Portland, K.G., P.C., G.C.V.O., on Friday last, was one of the most successful in the annals of the association. Not only was there a very large company present (about 160), but many distinguished gentlemen graced the festive board for the first time; it is to be hoped that they will become regular supporters, and that they will in the future lend their countenance and influence towards the extension of a charity whose aims and objects are so essentially meritorious. His Grace the chairman was supported by the Very Reverend the Dean of Rochester, the Venerable the Archdeacon of London, Viscount Powerscourt, the Hon. A. H. Smith-Barry, M.P., Sir Trevor Lawrence, Bart., V.M.H., Sir Walter Smythe, Bart., the Hon. Alban Gibbs, M.P., and Messrs. Jeremiah Colman, N. N. Sherwood, Harry J. Veitch, L. Salamans, Francis Ley, J. Robinson, H. Hicks, H. Youell, H. J. Adams, E. H. Sewell, W. Cobb, Jas. H. Veitch, J. Gould Veitch, Arthur W. Sutton, M. H. Foquett Sutton, W. Atkinson, Alfred H. Rivers, J. Lee, Charles Lee, G. Mouro, W. Assbee, F. W. Moore, Owen Thomas, G. Wythes, J. Hudson, H. Morgan Veitch, R. Dean, G. Gordon, and many scores of others almost or quite equally as well known in the realm of horticulture. We must also add the name of Mr. E. G. Hill, head of the important firm of E. G. Hill & Son, Richmond, Indiana, who may be said to have represented horticulture on the other side of the Atlantic.

The dinner, which was an excellent one admirably served, over, and grace having been said, the toast of her Majesty was given by the chairman, and it was received with exceptional enthusiasm. Then came from the chairman, "The Prince of Wales, the Princess of Wales, and the other members of the Royal family." In the course of a few remarks, his Grace paying a graceful tribute to the late Duke of Westminster, who had long been president of the Institution, announced that H.R.H. the Prince had testified again to his interest in the objects of the society by consenting to become its president. Not only must this be regarded as an honour to the Institution, but to the entire gardening community, and it is much to be hoped that H.R.H. will still further add to the honour already done by acting as chairman at the next anniversary festival dinner. Then, indeed, would the Gardeners' Royal Benevolent Institution leap from its present progress to the zenith of its prosperity. As further indicative of the interest of the royal family, the chairman announced that H.R.H. the Duke of York had consented to become a patron and H.R.H. the Duchess of York a patroness of the institution. Needless to say these facts were received with loud expressions of appreciation.

HIS GRACE THE DUKE then proceeded to the toast of the evening—"Success to the Gardeners' Royal Benevolent Institution," and at the outset thought that while expressing the great pleasure it gave him to occupy the chair, he should offer an apology for disappointing them on a previous occasion. As, however, he had been again invited, he might consider himself forgiven. He was, he averred, somewhat at a loss to understand why he should be chosen to such an important position, as he had few if any claims to be called a gardener. Rather had many years of his life ran in the direction of sport, including the propagation of hares and rabbits, which he was given to understand were not always the best of friends to gardens and gardeners. He wished everyone to understand that the possession of one of the largest gardens in the country was no unmixed pleasure—indeed, he had been bound to regard it as a white elephant. It had, he asserted, exemplified the saying, "the larger the garden the fewer the flowers," but now he was happy to know that under the supervision of one who had long been a supporter of the Institution the garden that had been a wilderness was fast becoming as a beautiful oasis, and he was gathering knowledge therefrom as would make him more fitted to preside over such a company. But, continued his Grace, whatever anyone's qualifications to be considered a gardener might be, everyone ought to do his utmost to advance the interests of the society. He, with everyone else, was bound to see the increasing importance of horticulture and agriculture in this country, and he considered that progress had been more rapid in these two allied sciences than in any other. This might be traced to several causes, such as those explorers who sent home from far distant lands beautiful trees, shrubs and plants for our gardens and greenhouses, and further to the splendid scientific works at Kew, and the persistent efforts of the Royal Horticultural Society. It was impossible to overestimate the value of such work, or to do too much honour to the workers. The diffusion of knowledge might even do a still greater good in winning back some of the population to the land. The rural school boards had recognised the importance of effort in this direction, and had included teaching on those subjects in their ordinary curriculum. His Grace then proceeded to place before those present the objects of the Gardeners' Royal Benevolent Institution, which were he said to assist necessitous gardeners and their widows with pensions or otherwise in their hour of need. Clearly and forcibly he dealt with point after point, and trusted in conclusion he had been able in some small degree to show how deserving of support the society really was. He hoped that not only all of those present, but also the public at large who

enjoyed the beautiful in life, would assist the cause that extended a helping hand to those whose labours were largely directed towards making the earth more beautiful and more fruitful. His Grace coupled with this toast the name of Mr. Harry J. Veitch, the treasurer of the Institution.

Mr. HARRY VEITCH thought it necessary to preface his remarks by saying to the regular attenders that there was little fresh for him to say, but asked them to remember that there were always new comers whom they were anxious to keep, and for whose benefit his remarks were made. Two points were, however, fresh to all—1, That it was the first time his Grace the Duke of Portland had been with them, and whom he desired to thank for his presence; and 2, They had to deplore the loss of their late president who, joining the Institution in its boyhood, had stayed with them to help and advise until it had reached a vigorous manhood. He referred to the honour that was done to the Institution and to gardening by the Prince of Wales in becoming their president. Mr. Veitch then placed before his auditors some striking statistics of the work that had been and was being done by the Institution, and looked for that support which would not only enable them to continue their present course but to enlarge their sphere of usefulness in a community where work was hard and pay not always large. He referred to the Victorian Era Fund and the Good Samaritan Fund, explaining briefly the aims and objects of each, and concluded by appealing in admirably chosen terms for assistance greater than had ever been given before.

Viscount POWERSCOURT in rising to support the claims of the Institution which had been so clearly demonstrated by Mr. Veitch, said he wished to pay a tribute to the memory of the late Mr. Malcolm Dunn, whom he had known and respected for many years as an able gardener and a straightforward, upright man.

"Horticulture" was placed in the hands of the Right Hon. A. H. SMITH-BARRY, M.P., who expressed his diffidence in undertaking such a task in the midst of an assemblage of experts. A knowledge of horticulture, he said, carried us back to the cradle of the earth and brought us forward through all ages to the present day, but notwithstanding the glories of the gardens of the Egyptians, Babylonians, Romans, Greeks, Japanese, Chinese, Moors, French, Italians, and other peoples, he did not think they could have had anything to beat the gardening of the present day in England. Horticulture, he said, was a science that all in differing degrees could enjoy. Mr. Smith-Barry coupled with the toast the name of the Very Reverend the Dean of Rochester, who, he said, was known the world over as an authority on all gardening matters.

Dean HOLE was, as is customary, enthusiastically received. He had, he said, passed eighty milestones on the journey of life; he had dined in royal palaces with the best Queen that ever lived, and he had taken tea in hovels of mud; he had numbered amongst his friends men famous in all the arts and sciences, but of them all he considered the greatest artists were those who beautified the land in which they lived. He related in his own inimitable way anecdotes of his life and the people he had met, and many a happy laugh was evoked during the speech. The recreation of horticulture, he affirmed, never palled; the love of a garden never faded. The garden, he said, was or should be a place of seclusion, repose, and restful peace, and as such he considered the change from stiff formality to natural informality a step in the right direction. He thanked them for their sympathy in listening to him, and wished them from his heart "the long and happy life of a gardener."

Mr. JEREMIAH COLMAN, Master of the Skinners' Company, gave the toast of "Our Visitors," for whom the Venerable the Archdeacon of London responded.

The subscription list was read out by Mr. G. J. Ingram at this point, and considering the calls upon everyone owing to the war in Africa, the famine in India, and the fire in Ottawa, must be deemed eminently satisfactory. Fears were entertained that it would fall very short indeed, but though it is not a record the efforts of the speakers were successful, as the total sum secured was £1980, which Mr. Sherwood undertook to make up to £2000. The principal amounts were—his Grace the Duke of Portland 50 guineas, Messrs. Rothschild & Sons 100 guineas, Baron Schröder, Mr. N. N. Sherwood, Mr. A. W. Sutton, and Mr. M. H. F. Quett Sutton each £50; Mr. R. Tait £36, Mr. W. Goldring £35, the Worcester Auxiliary £80, Mr. G. Monro, including the Covent Garden table, £123 9s. 6d.; Messrs. Fisher, Son & Sibray £26 5s.; Mr. and Mrs. H. J. Veitch each £25, Mr. J. Colman £26 5s., the Skinners Company £21, Mr. F. Ley £31 10s., Mr. J. Rochford £31, Messrs. B. S. Williams & Son £21, Messrs. W. Mackay, M. Gleeson, and J. Lambert each £20; Mr. R. Piper £15, Mr. J. Hudson 12 guineas, Mr. H. Rider £11, the Hon. Alban Gibbs, and Messrs. H. Tiarks, J. Laing & Sons, G. H. Richards, G. A. Dickson, G. Paul, J. G. Veitch, J. H. Veitch, and J. Wood & Son each 10 guineas, with numerous other smaller amounts, giving the grand total of £2000.

Mr. N. N. SHERWOOD proposed the toast of "Our Chairman," and in the course of his remarks pressed upon his Grace to induce the Duchess of Portland to become one of the vice-presidents of the Institution, which the chairman in replying undertook to do.

The proceedings were brought to a close with the toast of "The Secretary," to whose strenuous efforts the Gardeners' Royal Benevolent Institution owes a large measure of its prosperity.



Hardy Fruit Garden.

Disbudding and Thinning.—Where superfluous growths are yet soft enough to be removed with the finger and thumb, this method of removal may be adopted; but when the base of the shoots becomes hardened and woody, the shoots must be removed with a sharp knife, making a clean cut. The practice of disbudding and thinning out shoots in the early stages is practised as a ready means of regulating growth and avoiding a crowded state of the trees. Trees that are bearing a crop are much benefited by the timely removal of unnecessary shoots, for light and air are admitted more freely. On the other hand, trees in an unfruitful condition may in time be rendered productive if carefully disbudded and the shoots thinly disposed. The process of removal must always be gradual, as it is not desirable to rub or cut out large quantities at one time, which is likely to give a serious check, and might result in stone fruits gumming. Wall and espalier trees require attention equally all over, while bush, pyramid, and standard trees are prone to be crowded with growth in the centre. Neglect in carrying on disbudding and thinning with stone fruits results in injury to the successional shoots, which demand abundance of light and air to develop and become well ripened for future bearing.

Thinning Fruit.—Small and ill-placed fruit may be removed from Apricots, Peaches, and Nectarines. This may be done before the stoning process takes place, after which give the final thinning, leaving Apricots 4 to 6 inches apart, Nectarines 8 inches, and Peaches 10 inches. The small fruits have sufficiently developed on Plums to see which are swelling the most freely. All others may be removed, and those that remain to develop will be finer in consequence. Dessert Pears on walls, fences, and as pyramid trees may have the fruits thinned, commencing now to remove the small fruits, and those not well placed for swelling. The thinning of Cherries is not imperative, though to secure very fine fruit it may be adopted on small trees in the open and those on walls. Apples may eventually be thinned, large examples only being secured by reducing the number on a tree. Gooseberries may be thinned now to any extent, as the berries can be used for pies and tarts. The bushes, therefore, in this way usually receive all the thinning they require. The advantages of thinning are the better flavour and larger development of the fruit, as well as the strain upon the trees lessened, thus enabling them to build up good fruit buds for another season.

The Destruction of Insects.—Wall fruit trees are almost always attacked, more or less, with insects at this period, and some measures have to be taken in order to effect a clearance of them from the trees. A dry rooting medium is mainly the cause of the presence of aphides and red spider. In seeking for the cause of attack and finding it is dry soil, copious supplies of water should be given, and the surface afterwards mulched. At the same time destroy the pests. Aphides attack the points of shoots, the black fly usually doing so in colonies. One method of exterminating them is to dip the shoots in a solution of tobacco water, made by pouring half a gallon of water, boiling, upon 1 oz. of shag tobacco. Strain when cold, and add an ounce of soft-soap. The Gooseberry and Currant saw fly deposits eggs on the under sides of the leaves, and they forthwith hatch into small caterpillars, which soon make havoc with the foliage. Dustings of hellebore powder will destroy these, but as the substance is poisonous the fruit should be washed before using. Flowers of sulphur or fine lime are safer remedies. For the winter and codlin moth larvæ 1 oz. of Paris green to 20 gallons of water is considered the best remedy. The mixture during application must be kept well mixed, so as to insure even distribution, this being best effected by delivering it with a spray distributor. The first application may be given as soon as the blossoms fall, and the second a few weeks later. A sulphur and soft-soap solution is a good remedy for red spider, also frequent syringing, and maintaining the soil moist. The blistered and curled leaves seen on Peaches and Nectarines are not the result of insects, but of a fungus which is prevalent on trees growing in cold draughty positions. The leaves affected should be picked off, and if possible shelter afforded the trees in future from east winds.

Young Wall Trees.—With the trees now growing freely it is important that the growths receive proper attention in disposing them on the surface of the wall to the best advantage. Apricots, Peaches, and Nectarines bear on the young wood, therefore nail or tie in shoots of medium strength at full length. Apples, Pears, Plums, and Cherries which are to have a certain number of main branches disposed on the space available ought not to have them originated too closely, but in such a manner that they will run out a foot apart. The main growths of cordon trees may extend without stopping. Stop the side shoots of cordon Gooseberries and Currants when three pairs of leaves have been formed.

Stimulating Strawberries.—Immediately Strawberries have set a fair quantity of fruit, the plants will be assisted in developing them if liquid manure is given about twice a week. The drainings from cow sheds or stables are excellent for the purpose.

Fruit Forcing.

Melons.—When the fruit is cut from the earliest plants the old stem may be shortened back to a strong shoot near its base, removing as much soil as can be picked from amongst the roots without injuring them, supplying rather strong lumpy loam pressed well down and giving a good watering. If a moist atmosphere is maintained and the plants syringed in the morning and about 4 P.M., they will start freely, showing fruit in much less time than by planting afresh. If, however, the plants are affected with canker, or from carrying too heavy a first crop, a deficiency of water, or attacks of insects, are much enfeebled, it is better to remove them, thoroughly cleansing the house after taking out the old soil, and placing fresh sweet compost in ridges or hillocks, planting strong plants when it has been warmed through. Plants swelling their fruit should have a night temperature of 70°, though 65° or even 60° will do no harm when the nights are unusually cold and the days bright, 70° to 75° by day artificially being secured, admitting a little air at and above the latter, allowing an advance to 85° or 90°, closing at 80° to 85°.

Late Melons in Frames.—A useful crop of Melons may be obtained by making up beds now of any spent material, which from mixing and turning will generate a gentle warmth, placing over it frames that have been used for Potatoes and bedding plants, placing in each light a barrowload of rather strong loam, mixed with a fifth part of old mortar rubbish or road scrapings if deficient of grit, and pressing it down firmly. Into this when warmed through turn out a strong healthy plant, pressing the soil compactly about the roots, and giving a good watering. If the weather be bright shade for a few days. Seed may yet be sown to raise plants for frames at present occupied by tender bedding or other plants, but the Melons should be placed into their fruiting quarters with as little delay as possible.

Peaches and Nectarines.—*Early Houses.*—When the crop of Alexander or Waterloo Peaches, Advance and Cardinal Nectarines is gathered, the wood that has borne it should be cut out to the successional growths from their base for next year's fruiting, excepting those needful for extension. If the trees are too full of wood thin well, so as to admit light and air to the shoots, and thereby insure their thorough ripening. Early forced trees are liable to have the buds over-developed, and to cast them; therefore some growers leave the old wood until a later period to retard the buds, while others shade the house from bright sun with a similar object.

Covering the roof-lights with a thin wash of whiting and skim milk answers perfectly, using it as soon as the blossom buds are commencing to form, or from the fruit being gathered until the latter part of August. This is an excellent practice where trees suffer from over-maturity of the buds, and with proper regard to watering and keeping the foliage clean is effectual. Syringing should be practised in the morning and evening to free and keep the trees clear from red spider. The horders must always be in a thoroughly moist condition, as it is important that the foliage be kept healthy as long as possible. Admit abundance of air in the daytime where the fruit is ripening, and a little at night to prevent the deposition of moisture on the fruit, which is likely to induce decay at the apex, if not encourage an attack of "spot," *Glaeosporium laticolor*, which is sometimes disastrous to Peaches and Nectarines, as well as Figs and Grapes.

Succession Houses.—Only moderate artificial heat will now be required, in order to admit a free circulation of air. Remove any leaves that shade the fruit too much, raising the latter on laths placed across the trellis, so as to bring them with their apexes to the light. Attend regularly to tying in the shoots, stopping the laterals at the first joint as soon as made. Any shoots that cannot be allowed to extend without crowding or encroaching on others, stop at about 14 inches, exception being made of extensions. Shoots retained level with or past the fruit to attract the sap to it should be stopped to one or two joints at each break. Syringing must be practised morning and afternoon to keep red spider under, and the inside border attended to as required with water. Admit air early in the day, and in the case of houses with the best quality glass, or the inferior liable to scorch, in large panes a double thickness of herring or single pichard netting drawn over the roof-lights is beneficial in very bright and hot periods, preventing the foliage browning.

Late Houses.—Thin the fruit, leaving very few more after the fruits attain the size of Walnuts than will be required for the crop, up to which stage the thinning should be gradual, and avoid overburdening the trees. It is better to retain too few than too many fruits, fine examples being always appreciated, whilst the indifferently swelled and quality lacking are a source of complaint. There is no greater mistake than retaining more shoots than there is room for, as if the wood is not properly formed and is not solidified as made imperfect buds result. If aphides appear fumigate on two or three consecutive evenings, having the foliage dry and being careful not to give an overdose.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Triteleia uniflora (W. C. & S.).—The flower and leaf accord with the varietal form of the Spring Star Flower, *Triteleia uniflora* violacea, which thrives in a rich, well-drained soil in a sunny situation. It is propagated by offsets, the bulb being proliferous, and by seeds. If planted amongst short grass it holds its own for a season or two, but the plant and flower become smaller by degrees, not, so far as we have experienced, long surviving. Both it and the species form good bulbous plants for pots, flowering profusely in early spring, but the flowers remain nearly or quite closed in dull, opening only in bright weather.

Black Streaks in Potato (*Melfort*).—The brown or blackish streak in the flesh of the Potato is caused by the mycelial hyphae, or mycelium of the Potato disease fungus, *Phytophthora infestans*, and is the usual resting condition of the parasite. In this state the fungus passes over the winter in the Potato, it showing little or no sign of injury externally. The mycelium of the fungus has in the specimen before us entered the tuber at the heel or wire end, and passed to very nearly, yet not quite, the eye or growing end, the streak in no case being continued to the eye or eyes. There was as yet no indication of the mycelial hyphae developing. As to whether the mycelium would develop and ascend the plant by the stems is matter for conjecture, but it is certainly living, and may under favourable conditions give rise to the disease, or rather continue it in the plant of which the tuber is simply an underground continuation stem. We should say that a dressing of lime would be a good application to the land, and likely to be of service to the Potatoes, as well as preventive of the disease by fortifying the host plant or Potato. The spraying of Potatoes about earthing-up time would be advantageous.

Muscat of Alexandria Vine not Showing Fruit (W. L.).—The cause of Muscat of Alexandria not showing or bearing any fruit, is that the pruning buds did not contain bunches in embryo. From your letter we gather that the Vines are weak, and produced little fruit last season. Possibly, therefore, the cause of the imperfect bud formation was general weakness, especially of the basal or pruning buds. It follows that pruning to one or two buds in such cases gives no fruit, simply because they do not contain any; while the third or fourth bud, in case of the Vines having been shortened to them, give some fruit, and thus the buds correspond to the vigour of the leaf in the previous season. This long pruning or shortening to the best bud on each spur growth often affords a fair if not a good show for fruit, when close pruning on the same Vine does not produce any bunches. As you dug down 2 feet 3 feet away from the Vines and could not find any roots, it may be assumed that the root formation is very deficient, or that the roots have gone straight down, and are in a very unfavourable position for acquiring the essential aerated food. In a similar instance we have known an entire change effected in the condition of the Vines by removing the soil from about the stems to a distance of 3 to 4 feet early in autumn, not injuring the roots, but notching them about half through, and with the upper cut transverse, the notches being about 1 foot apart and on opposite sides of the root. This done, and the soil cleared away to the drainage, or at least 2 feet deep, place in good turfy loam, or a compost of twelve parts turfy loam, two parts old mortar rubbish, one part wood ashes, and half a part "nuts" charcoal, the turfy loam being chopped up moderately fine, and the whole well mixed. The soil should be made rather firm, and the operation performed whilst the leaves are on the Vines. As you have taken one or two young canes from the base of each Vine, you may cut away the old rods in their favour. As for manure, we fear little benefit would attend its use this season, as until the Vines have roots to appropriate it there is not much to hope for. However, you may use the following mixture:—Bone superphosphate three parts, sulphate of potash two parts, and sulphate of magnesia one part, mixed, applying 4 ozs. of the mixture per square yard, and pointing in very lightly. The dressing may be repeated in the course of six weeks.

Stop the laterals at the first leaf, and the sub-laterals to one joint as produced. The treatment practically amounts to renewing the rods, and having a diminished crop for some years, though increasing yearly. Whether it would be advisable to entirely lift the Vines is matter for your judgment, after carefully examining the border and ascertaining the state of the soil and drainage.

Adiantum Farleyense and Orchids Unsatisfactory (*Constant Subscriber*).—We have seen no healthier plants of the handsome Fern mentioned than were grown in a mixed plant stove. The temperature of this stove was never forced above 60° by fire heat, though it was often naturally, and properly, much higher under sun influence. The atmospheric moisture was in proportion to the heat, genial but not excessive, nor was the shading dense. Very much shade, heat, and moisture are not conducive to bold substantial fronds. Nor were the plants overpotted in spongy material, consisting in part of "Orchid peat." They were grown in sound loam, kept sweet and porous by crushed charcoal and sand, pressed somewhat firmly in the pots, small rather than large in proportion to the size of the plants. They were watered with judgment, supplies being given always when required, and never when the soil was sufficiently moist for healthy root action. If the soil, no matter what kind, be allowed to become too dry on the one hand for watering, or anything like sodden on the other, there can be no healthy growth. Possibly the soil in which your plants are lingering, instead of luxuriating, is sour. Many Orchids could not possibly remain healthy under the tropical conditions you describe. Some might grow very well for a time, but would need different conditions of a restful nature for solidification and flowering. It is, however, impossible to give useful advice on Orchids without knowing their names.

"Geranium" Plants Rotting just above the Soil (*H. C.*).—The "blacklegging" of Pelargonium stems is due to a fungus, Pythium De Baryanum, the malady being known to all gardeners as "damping off." It affects seedlings and cuttings of a great variety of plants. The affected part shrinks and turns black, hence the term "blackleg," decaying and spreading so that the stem becomes girdled and the plant collapses. Sometimes, however, the plant possesses the vital force to be able to resist its advance, then there remains only a wound on the affected part, and that healed over by new tissues, the parasite being completely thrown off or isolated. The disease extends from one plant to another in seed or cutting beds. The plants attacked and the soil between them becomes more or less covered with the mildew-like growth of the fungus mycelium, and the resting spores are produced and may be dormant until favouring conditions again arise for their germination and development. The fungus is usually introduced by leaf mould, it being of a saprophytic as well as parasitic nature. It is easily destroyed by giving the compost the conditions (heat and moisture) favourable to the development of the spores, and then, a few days later, exposing it to a very dry, hot atmosphere, so as to kill the delicate growth of the fungus. The preventive measures adopted by gardeners are well working the land, thin seeding or inserting of cuttings, keeping the plants stocky, giving plenty of air to avoid a stagnant atmosphere, and above all things preparing the compost some time before use, so as to have it sweet and free from the spores of the fungus. In your case we advise change of soil, though it is possible that watering the plants with an extremely weak solution of copper sulphate, say 1 part in 2000 parts water, or 1 oz. sulphate of copper to 12½ gallons of water, may arrest the fungus.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A Reader*).—1, Berberis Darwini; 2, Wistaria sinensis. (*R. Sussex*).—The flowering shrub is Spiræa Thunbergi; both the other specimens were pieces of the common Beech, Fagus sylvatica. (*G. J. W.*).—1, Pyrus spectabilis; 2, Prunus (Cerasus) Padus, the Bird Cherry; Rhododendrons can only be accurately named by comparison in a large collection. (*R. M. B.*).—1, Cattleya Mendeli, good form; 2, Lælia purpurata; 3, Cypripedium Lawrenceanum; 4, Dendrobium Bensoniæ. (*T. G.*).—Cerasus avium flore pleno. (*W. C. & S.*).—Triteleia uniflora, see page 448.

Trade Catalogues Received.

W. Cooper, 755, Old Kent Road, S.E.—*Structures*.

W. Cutbush & Son, Highgate.—*Hardy Plants*.

Van Meerbeek & Co., Hillegom, near Haarlem.—*Wholesale Bulb and Plant Catalogue*.

Covent Garden Market.—May 23rd.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, sieve ...	5 0	to 10 0	Grapes, black	2 0	to 4 0
„ Californian, case ...	8 0	14 0	Lemons, case	4 0	15 0
„ Nova Scotian, barrel	15 0	22 0	Melons, house, each ...	1 0	2 0
„ Tasmanian	8 0	18 0	Oranges, per case	5 0	15 0
Apricots, per box	1 6	0 0	„ Californian, seedless	16 0	24 0
Cherries, per box	0 9	1 3	Pears, Californian, case...	6 0	12 0
„ black, house	6 0	8 0	Pines, St. Michael's, each	1 0	6 0
Cobnuts per 100 lb....	80 0	90 0	Strawberries, lb.	3 0	6 0

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, green, doz. ...	1	0	to	2	0	Mushrooms, lb....	0	8	to 0 10
Asparagus, green, bundle	0	9		3	0	Mustard and Cress, punnet	0	2	0 0
" giant, bundle	4	0		6	0	Onions, bag, about 1 cwt.	4	6	5 6
Beans, Broad, per flat ...	3	0		4	0	" Egyptian, cwt. ...	8	0	0 0
" Jersey, per lb..	1	0		0	0	Parsley, doz. bunches ...	2	0	4 0
Beet, Red, doz....	0	6		0	0	Peas, Jersey, lb. ...	0	9	1 0
Cabbages, per tally ...	5	0		7	6	" French, per pad ...	2	6	3 6
Carrots, doz. ...	3	0		4	0	Potatoes, cwt. ...	3	6	6 0
" new, bunch...	0	3		0	4	" new Jersey, lb.	0	2	0 5
Cauliflowers, doz. ...	3	0		5	0	" Teneriffe, cwt....	18	0	28 0
Celery, bundle ...	1	0		1	9	Radishes, long, doz. ...	0	6	0 0
Cucumbers, doz. ...	2	0		4	0	" round, doz. ...	1	0	0 0
Endive, doz. ...	1	6		2	0	Shallots, lb. ...	0	3	0 0
Herbs, bunch ...	0	2		0	0	Spinach, bushel ...	2	0	3 0
Leeks, bunch ...	0	3		0	0	Tomatoes, foreign, doz. lb.	4	6	5 6
Lettuce, doz. ...	0	10		1	2	" English, doz. lb.	8	0	9 0
" Cos, doz. ...	2	0		3	0	Turnips, bunch... ..	3	0	4 6
Mint, green, doz. bunches	2	0		0	0	" new ...	0	0	0 10

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.			
Arums	2	0 to 3	0	Narcissus, double white,	4	0 to 0	0	
Asparagus, Fern, bunch...	2	0	2	6	doz. bunches ...	4	0 to 0	0
Bouvardia, bunch	0	6	0	9	„ Pheasant-eye, doz.	1	0	0
Carnations, 12 blooms ...	1	6	2	0	„ bunches	5	0	7
Cattleyas, per doz.	0	0	12	0	Odontoglossums	8	0	12
Eucharis, doz.	3	0	4	0	Pelargoniums, doz. bnchs	2	6	3
Gardenias, doz.	1	6	2	6	Roses (indoor), doz....	2	0	4
Geranium, scarlet, doz.	6	0	9	0	„ Red, doz.	2	0	3
bnchs.	3	0	4	0	„ Safrano, doz	2	0	3
Ixia, doz bunches	3	0	4	0	„ Tea, white, doz. ...	3	0	4
Lilium Harris, 12 blooms	3	0	4	0	„ Yellow, doz. (Perles)	6	0	12
„ longiflorum, 12 blooms	3	0	4	0	„ Maréchal Niel, doz.	3	0	4
Lilac, white, bundle ...	0	6	1	0	„ English (indoor):—	3	0	6
„ mauve, bundle ...	0	6	1	0	„ La France, doz. ...	3	0	8
Lily of the Valley, 12 bun.	6	0	18	0	„ Mermets, doz	4	0	6
Maidenhair Fern, doz. bnch	8	0	10	0	Smilax, bunch	0	6	0
Marguerites, doz. bnchs.	3	0	4	0	Tulips, scarlet, bunch	1	0	1
„ Yellow doz. bnchs.	3	0	4	0	„ yellow, bunch	1	0	1
Mignonette, doz. bunches	3	0	5	0	„ bronze, bunch	1	0	1

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12	0 to 24	0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36 0	Genistas, per doz. ...	8 0 15 0
Arums, per doz. ...	6	0	8 0	Geraniums, scarlet, doz....	6 0 10 0
Aspidistra, doz. ...	18	0	36 0	„ pink, doz. ...	8 0 10 0
Aspidistra, specimen	15	0	20 0	Hyacinths, Dutch, doz. ...	10 0 18 0
Azaleas, various, each	2	6	5 0	Hydrangeas, white, each	2 6 5 0
Boronias, doz. ...	20	0	24 0	„ pink, doz. ...	12 0 15 0
Orotans, doz. ...	18	0	30 0	Lily of Valley, per pot ...	1 0 2 0
Dracæna, var., doz....	12	0	30 0	Lycopodiums, doz. ...	3 0 6 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	8 0 10 0
Erica various, doz. ...	8	0	18 0	Mignonette, doz. ...	8 0 12 0
Euonymus, var., doz. ...	6	0	18 0	Myrtles, doz. ...	6 0 9 0
Evergreens, var., doz. ...	4	0	18 0	Palms, in var., each ...	1 0 15 0
Ferns, var., doz. ...	4	0	18 0	„ specimens ...	21 0 63 0
„ small, 100 ...	4	0	8 0	Spiræas, per doz. ...	8 0 12 0
Ficus elastica, each ...	1	6	7 6		



How we Feed Ourselves.

Not a day or a week passes when we do not see grave charges brought against the British agriculturist. These charges generally take the form of indictments of bad management—our methods of tilling are old fashioned—extravagant, and inutile. We do not get the uttermost that the land will yield; we are not as wideawake as

the foreigner, and so on and so forth. These reproaches usually come from men who are by no means as "up" in their subject as they think they are, but they serve their purpose, which is agitation against the present system and present workers. It is always advisable before addressing the public to make sure of the facts. We know very well how facts and figures may be manipulated, but still facts and figures are better than generalities—there is something to grasp.

Our population, instead of being stationary like that of France, is increasing rapidly; our land is sea girt, and therefore we cannot enlarge our borders to accommodate our family. We have done what we thought was the next best thing—established colonies and dependencies pretty nearly all the world over, and we expect that they help us in two ways—viz., relieve us of our surplus population and feed us with their surplus stores, for which we are ready to offer the best price. This, it appears, is not at all the proper thing to do. We should be self-contained, that is, be able within our own borders to produce enough of those feeding stuffs that the climate will allow us to grow. We are told constantly that we do not cultivate every available acre, that there is much of what is termed "waste land," land crying out to be tilled, that there is too little under plough and too much laid down to pasture; and that which we do cultivate we only do badly. We are not perfect, we know; but we fancy we can compare very favourably with those other nations that are held up as our examples.

Let us see what we do import, and the land needed for the production of those imports; let us count up our acres available and non-available, and strike a balance. Let us see per acre what we can manage to raise, and let us ask what other countries can raise per acre too—and then see who, acre for acre, has the best of it. Wheat comes first; it is allowed on all hands that we must have bread, and we find that we can only produce one-quarter of what we annually need. We do not say anything about the cost of producing that bread, but there is a pretty general opinion abroad that the grower will not become rich on his profits, and it is hardly to be expected that men are so large minded as to want to work without seeing some return for their labour. As meat eaters we find that we can supply about 62 per cent. of our yearly requirements. Much more meat is eaten now than formerly, and this is owing to the fact that the foreigner sends meat that he can afford to sell at a price to be within the means of our poorer population, a population that till recently were not great meat consumers. Owing to cheap bread and meat the consumption of the Potato declines rather than increases, and we practically supply ourselves. Of milk products we require about 45 per cent.; by that we mean butter, cheese, and condensed milk.

But there are other food products we are importing that by the casual inquirer might be forgotten. They are what might be termed indirect food products, and are classed under the following heads. They are needed, not for ourselves, but for our stock and for the purposes of fertilisation. We find in the list Barley, Oats, Rye, Beans and Peas, Maize, both whole and in meal, Buckwheat, Cotton seed, Linseed, Rape seed, linseed and cotton seed cake, other cakes and hay. Some of the Barley and Maize are for malting, but all the small second class Barley is used as feeding meal; we might put that down as about 11,947,000 cwt. per annum. We are very free users of the various oil cakes, and we also need much additional hay. Ninety million cwt. of feeding stuffs per annum would take a good deal of producing, and we fear that this production would be a puzzle that would perplex our many advisers. To get this food or its equivalent would require six million acres, and the question is whether we could produce the equivalent.

Very well, now let us see how much land would be needed to produce the Wheat, beef, mutton, and milk which we import. It has been worked out carefully by experts, and they have arrived at the following conclusions:—

	Acres.
Wheat would require	5,979,000
Beef	4,108,000
Mutton	2,176,000
Milk and its products	4,643,000
Feeding stuffs	6,093,000
	<hr/> 22,999,000

Now where are we to find these twenty-two million and odd acres? The total area of land and water in the United Kingdom is 77,671,000 acres, and of that 47,800,000 are under crops and grass. We cannot and do not suppose that much of the remaining twenty-nine millions are fit and suitable for cultivation; there is the water to deduct, the buildings, and the true waste lands. Of course some would say, "Plough up some of the grass." Well that would only be robbing Peter to pay Paul; we might get a little more grain at the expense of beef and mutton, and certainly at present we find if there is a bit of profit at all for the farmer it comes from his beef and mutton.

We should fare very badly without the oil cakes. Linseed has been given up for some time as an unprofitable crop in England, and though attempts have been made to revive that industry, they have only met with failure. Eliminate Maize from the bill of fare and you do away with a cheap and most valuable feeding stuff, and it will be allowed on all sides that Maize cannot be grown except as a green fodder crop in some of our warmest counties. We cannot even make an attempt at cotton cake, that is quite beyond our power, and yet cotton cake we must and will have.

We had intended to say a few words respecting the fallacy (for fallacy it is) that we do not get as much return per acre as some of our Continental neighbours; but the subject is too long to be treated of at the small end of a paper; we must keep it for another day. It is too bad to find our own people always belittling their own country folk.

Some of the calculations as to the production of feeding stuffs on mixed occupations are most interesting. They are based on the supposition that the land is of the best quality and under the best management. This is a table of quantities. Beef, 1200 lbs. annually will be produced from 65 acres; mutton 112 lb. from 0.64 acres; milk, 500 gal. from 20 acres. How many of us know what is our due, then, of the national butcher's bill? We fancy a good many of us fall far short of our proper share, 66 lbs. beef, 31 lbs. mutton, and 35 lbs. pork. Things (even butchers meat) are not evenly divided.

We fancy the greater production of vegetables of all sorts may have, in a small measure, affected the Potatoes. There has been a steady and large increase in the greengrocery of the kingdom. All manner of Broccoli and fancy vegetables are both abundant and good, and we see signs that our cooks look for and expect something beyond the homely Potato and Cabbage. It is good both for the health and the pocket that we include more vegetables in our dietary—in the past we have been rather too conservative, and have failed to appreciate at their proper value any but the very commonest and most easily cooked of the vegetable kingdom.

Work on the Home Farm.

We rejoiced too soon when we thought that the heavy rain would bring warmer weather, for the last week has been an unbroken record of north-easterly winds, cold and piercing, with sometimes we must imagine a touch of frost in them, for every kind of vegetation is looking more or less nipped. Barleys have distinctly gone back during the week, and have lost much of their promising appearance. Wheats are also showing signs of rust, and both are badly in want of more sunshine. It is late for top-dressing, but where Wheat turns very yellow, as the season is such a backward one, a light dressing of nitrate, say, 80 lbs. per acre, might be advisable. As regards farm work, the weather has been everything one could desire. The chief work now is ploughing fallows for Turnips, or rather Swedes. The land is turning up in beautifully moist condition, and much finer than was expected. Swedes could be put in well now, and no doubt many will be sown, especially in the north; but the land is hardly warm enough, and we should prefer to wait until mid-June rather than drill Swedes in cold weather. We have seen very fine crops indeed from May sowings, but not a May like this.

Mangold will soon be peeping through, and it must be side-hoed as soon as the rows of young plants can be discerned. Potatoes will soon be through, and if not already done must be ridge-harrowed. Such work went very well immediately after the recent rain; the large clots fell to pieces beautifully.

Pastures look greener, but there is only a short bite. The shortness of plant in the seeds is telling its tale now the young growth has a mouth always at it, and cannot make any headway. The Clovers laid in for hay having been relieved from stock for a month begin to look rather promising, and have stood the cold as well as anything. Meadows are the same; grass is growing where it has a chance. The cake merchant still drives a good trade; we see many waggons fetching cake to the farms. No doubt the price of meat is well repaying the farmer for his outlay. When a butcher has to pay 8s. 9d. per 14 lbs. for beef, and up to 10d. per lb. for clipped sheep, there is a good margin to buy extra foods with. As there is a strong probability of a striking decrease in the numbers of sheep recorded in the coming agricultural returns, farmers must make the most of their limited stocks. There is little fear of foreign meat having a very serious effect on the trade for some time to come. We hear that at the Yorkshire and Lincolnshire May hirings hands were almost impossible to obtain, and wages higher even than in the 1876 boom.

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Journal of Horticulture.

THURSDAY, MAY 31, 1900.

The *Journal of Horticulture* can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 12, Mitre Court Chambers, Fleet Street, London.

Renaissance of the Verbena.



WITH affectionate reminiscences for what, more particularly in the thirties, forties, and fifties, was considered to be the queen of bedding plants, it is with unfeigned pleasure that I observe there is a growing revival of the Verbena. My initiatory acquaintance with the then leading varieties was upwards of half a century ago, and there was no greater favourite of the parterre with me than the Verbena. Change is the fashion of the day, but the decadence of the Verbena, whether as a flower garden plant, pot plant, or as a florists' flower, can hardly be ascribed to that fickle jade, but rather to a deterioration of its constitution through over-propagation, and thus rendered it more amenable to disease, similar in effect to that of the Hollyhock. Thanks, however, to the hybridist, and to a careful selection of the seedling plants, combined with a generous cultivation, the Verbena has not yet become alienated from our gardens.

Where it is not competent to perpetuate named varieties for bedding-out purposes, seedling plants from carefully produced seed afford a pleasing feature by their multiform coloration and the soft fragrance with which they are sure to be more or less endowed. There is no other habitué of the flower garden that possesses so many attributes as the Verbena; it has a most accommodating habit of growth and multiform shades of coloration, eclipsing its compeer, the "bedding" Pelargoniums, and which is, perhaps, a venturesome assertion to make, considering the manifold attributes of the latter, and no bedding plant has withstood the test of time longer than the good old Purple King, for instance. Years ago, too, the Verbena was largely cultivated in pots for the decoration of the greenhouse and exhibition, and by a judicious selection of strong and healthy young plants, liberal treatment at the roots, and due attention to stopping and training the shoots, very fine specimens may be secured. To see a greenhouse from 50 to 100 feet long staged full of specimen plants flowering

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in shades of scarlet, crimson, purple, blue, and white, it will be readily conceded that no other decorative plant can afford so charming a display of beauty and colouration combined.

The exigencies of space forbid full details of the cultivation of the *Verbena* in pots, simple though it be, so that the repeated advice—a system of liberal treatment—must for the present suffice, seeing that starvation doubtless was responsible for having brought this once general favourite into comparative unpopularity. Moreover, it has been supplanted by new comers, such as the splendid variety of the hybrid tuberous *Begonias* and *Gloxinias*, lacking, however, the sweet fragrance of some of the *Verbenas*. As a florists' flower the *Verbena* was formerly a favourite, and a stand of cut flowers on the exhibition table was sure to attract attention, especially if from three to five trusses of one colour were put together and not crowded, but spread out to their fullest advantage, and kept apart with a little moss or cotton wool rendered invisible. If shown in single trusses they present a comparative meagre appearance. For the sake of uniformity, however, the individual size of the variety must be taken into consideration, and possibly three extra large trusses would present a better effect than more.

In evidence of the standard quality of several varieties of the bedding section cultivated from a quarter to half a century ago, and which, I believe, are still in existence, mention may be made of such as *Purple King*, *Géant des Batailles*, *Brillant de Vaisse*, *Crimson King*, *striata perfecta*, together with another striped variety, the sensational *Impératrice Eugénie*; add to these the very dwarf habited *Melindres splendens*, said to be a species brought from the hills of Buenos Ayres in 1827, and the first scarlet introduced of the greenhouse herbaceous section of *Verbenas*. It is also known by the specific name *chamædrifolia*, and there is an improved variety of it called *Melindres splendens grandiflora*. In the trade parlance the herbaceous *Verbena* is divided into two sections—viz., show and bedding, though many of the varieties in both will suit either purpose.

It may further be interesting to remark that in respect of show varieties mention should be made of two notable ones figured in the "Florist and Pomologist" of March, 1863, named respectively *Lord Leigh* and *Lord Craven* (two Warwickshire noblemen). The former was raised by Messrs. S. Perkins & Sons, Park Nursery, Coventry, being a chance seedling that came up in the open ground—a handsome variety, remarkable for the large size of its flowers, of excellent form, colour crimson scarlet, brightened by a clear yellow eye. The latter variety was raised by Messrs. Downie, Laird, & Laing, of Sydenham and Edinburgh; it was a remarkably fine variety, producing bold, well filled trusses of large, flat, well formed flowers 1 inch in diameter, and of a rich velvety, pucey-purple self colour. Both varieties received first certificates from the Floral Committee held at Kensington. Innumerable equally fine varieties have been raised since the breeding of those sensational varieties, and many of which are reminiscent of such noted raisers as Keynes, of Salisbury; Smith, of Hornsey; Eckford; of Sweet Pea fame; Wills, of Chelsea; and Robinson, of Pimlico, who raised the famous Robinson's Scarlet Defiance. Note, too, the late Mr. C. J. Perry, of Handsworth, Birmingham, who raised numerous varieties of great merit, but unfortunately owing to their cultivation in the greenhouse the majority of them were debilitated in constitution, Mr. Perry's chief aim having been the securing of fine blooms for exhibition purposes.—WILLIAM GARDINER.

PROMISED BOTANICAL TREASURES.—The British Museum trustees are undertaking a work of some historic interest in deciding to publish the series of copperplate engravings illustrating the plants collected in Captain Cook's first voyage, when Sir Joseph Banks and Dr. Solander were the naturalists, and in Captain Cook's second voyage, when the Foresters were the naturalists. These plates, which number more than 800, were prepared at great cost by Sir Joseph Banks some hundred years ago, and have never been published. Proofs only were pulled, and these are now in the library of the Botanical Department of the British Museum. Their publication will be of great interest to botanists.

"The Art and Craft of Garden-Making."

ILLUSTRATION is the mania of the moment. On every hand we note the prodigious progress which is being made in the reproduction of natural as well as of living objects through the medium of photography. In no department is this more noticeable than in the higher-priced magazines, which present us with the most charming representations of absent scenes and landscapes, but which unfortunately are not always accompanied with an equally fascinating and instructive text. If any class of literature has benefited rather than another by these new wondrous mechanical methods of illustration it is surely that of landscape gardening and horticulture. Painful indeed is it to look back some twenty, or even ten, years to the so-called pictures of garden and woodland, in which the trees often resemble those imported varieties from the Black Forest stocked in the Lowther Arcade for transplantation to the English nursery. Within a decade we seem to have traversed whole centuries of progress in black and white illustration—from the Chinese or block-book style of art to the full glory of the Renaissance.

But as we suggested above, there is, owing to this facility of illustration, an inclination in many quarters to subordinate matter to manner. Even in organs of a special class, which profess to administer scientific instruction, there are frequent lapses into mere *dilettantism*, where eked out and disguised a disproportionately small and unsatisfying text is set off by a perfect *embarras* of picture. Pleasant, therefore, is it to meet with a handsome quarto volume like the subject of this notice, which, while spreading all the present day charm of illustration over mansion, grove, lawn, river, and meadow, extends it also to matters of pure technique, accompanied by text of the soundest, practical, and most concentrated character.

In a volume of some 220 pages Mr. Mawson has treated of the "Art and Craft of Garden-Making." Pleasantly leading you through fifteen methodically graduated chapters (of which the first is a succinct history of garden-making in this country) he deals, amongst other topics, with the choice of a site, the making of gateways and fences, terraces, lawns, summer-houses, conservatories, fountains, lakes, kitchen gardens and orchards, landscape gardening, trees, shrubs, climbers, perennials, aquatic plants, and Ferns. In his endeavour to make this work terse, exhaustive, and complete within its comparatively small compass, Mr. Mawson has clearly spared no pains. He has consulted the best authorities and selected some of the best exemplars of existing gardens or of useful features in those gardens. Everywhere the text is sound and the diagram or illustration admirably adapted to explain the principle which the text seeks to inculcate. These diagrams and illustrations number in all 145, of which thirty-two are perspective and photographic views in leading gardens, twenty-four are garden plans, seventy-seven technical sections, sketches, details, and twelve garden designs.

In perusing these pages one is continually impressed with the desire of the author to make his work eminently useful to the reader. Authorities from everywhere are quoted, architects treat of the Oriental modes of trellis-work, all the best species and varieties of trees, shrubs, flowers, and grasses for permanent planting or annual bedding are indicated, types of devices and decorative adjuncts for the country-seat or villa-residence exist in profusion with instances, and when any construction or method of culture presents some doubt or difficulty, an expert's opinion often accompanies it suggesting a helpful alternative.

In the short space at our disposal we are unable to do complete justice to the very desirable treatment displayed in this volume. It is an object of pleasure as well as a mine of instruction, and fitted either for the drawing-room table or the use of a practical man who is capable of expanding an idea clearly presented, of an already familiar subject. We can highly recommend it to all who are interested in the delightful art of gardening, and trust we may yet have an opportunity of drawing special attention to some of the peculiar merits which it embodies.

* "The Art and Craft of Garden-Making," by Thomas H. Mawson. London Published by B. T. Batsford, 94, High Holborn, and Geo. Newnes, Ltd., Southampton Street, Strand. 1900. Price 21/-.

*Lælia purpurata Littleiana.*

THE varieties of the handsome *Lælia purpurata* that are considered worthy of a special varietal name are yearly becoming more numerous, and bearing in mind the beauty and utility of this Orchid no one can regret the fact. At the Temple Show last week examples of *Lælia purpurata* were not, perhaps, so numerous as is generally the case at this gathering, owing, of course, to the lateness of the season, but those staged were of high average excellence. The plant exhibited by Henry Little, Esq., Baronshalt, Twickenham, was in perfect condition, and the flower was so meritorious that the Orchid Committee of the Royal Horticultural Society recommended a first-class certificate. The form of one of the flowers is admirably depicted in the illustration (fig. 122, page 455). The sepals and petals are pure white, as is the lip, save for the crimson markings shown and the yellow crimson veined throat. *L. purpurata Littleiana* must be accorded rank amongst the finest Orchids that have been exhibited in London this year.

Odontoglossum Souvenir de Victor Hye-Lebrun.

Amongst the many superb Orchids that were exhibited at the Royal Horticultural Society's great Temple Show were several from Belgian growers; these were in the main of fine quality. Of them all, however, *Odontoglossum Souvenir de Victor Hye-Lebrun* (fig. 121) was the most excellent from the Continent, and one of the best in the whole exhibition. This hybrid resulted from a cross between *O. Harryanum* and *O. luteo-purpureum*, and distinct evidences of both parents are perceptible in the flowers. The sepals and petals are almost wholly brown, the yellowish green only showing occasionally. The front portion of the magnificent lip is pure white, and the basal part crimson. The Orchid Committee showed its appreciation of the flower by recommending a first-class certificate. This *Odontoglossum* was exhibited by Mous. Jules Hye-Leyse, and though it was packed away in an obscure corner of a particularly ugly case, it created almost if not quite as much interest as any other individual Orchid in the entire show. If all the Orchids sent by our Belgian neighbours equalled this they would be particularly welcome.

Oncidium monachicum.

This plant belongs to the same set as *O. serratum*, which species it resembles in habit. The spikes are long and many-flowered, the individual blossoms lasting well when cut. But the spikes should not be cut entire, as they do not absorb the water rapidly enough to keep the large number of flowers going. The sepals and petals are deep brown with a bright yellow frilled margin. Keep the plants in a cool house, and let the pots be rather on the large side but well drained. A moist atmosphere is at all times essential.

Dendrobium suavisimum.

Usually considered a variety of *D. chrysotoxum*, this plant is quite distinct, and a very handsome Orchid it is. The golden yellow blossoms occur on loose racemes from the upper part of the stems and last a couple of weeks in good order. It is a vigorous grower and a rapid one when it is at it, for the growing season often extends over a couple of months only. Still it will not do to dry the plants over the rest of the year, as this will lead to shrivelled bulbs and a weak state generally. A fairly regular intermediate temperature suits it best.

Dendrobium rhodopterygium.

A most ungainly-habited species, this *Dendrobium* is very pretty when in flower. It is very free flowering too, for the stems are almost completely hidden by the warm rose purple blossoms just now. In the lip there is usually a deep crimson purple stain that brightens up the flower considerably. It is a native of British Burmah, and likes ample heat during the growing season. Being strictly deciduous a long season of dry rest is necessary after the leaves have fallen, and the stout erect stems seldom suffer from this protracted drying.

That is always supposing they were well ripened in the previous autumn, for to get good flowers from an unripened stem is as unlikely as getting good fruit from an unripened Vine. It does not relish a lot of compost or room in the pots or baskets, and it is quite a mistake to pot the plants on when new material is given. Rather let the greater part of the peat and moss be removed, and the plants returned to pots of similar or only very slightly larger size. During the flowering season the plants may be placed in a drier and cooler atmosphere to conserve the blossoms.

Odontoglossum citrosum.

The true beauty of this fine Orchid is never seen at large shows, for it is seldom properly staged, the pendent spikes making it very difficult to pack or to show. Tied upright the plant loses much of its beauty, yet this is how it is exhibited in many cases. But as a plant for house decoration there is nothing much prettier in the whole Orchid family. The blossoms vary a good deal in colour, but are all sweetly scented, and although they last for a week or two in presentable condition, yet they are most beautiful in the first few days.

The culture of *O. citrosum* presents a special difficulty. It is perfectly at home in any fairly moist house kept at an intermediate temperature, not unduly shaded on the one hand, but sufficiently so to prevent injury to the foliage. Well rooted plants require abundant moisture supplies, and especially when growing freely in summer.



FIG. 121.—ODONTOGLOSSUM SOUVENIR DE VICTOR HYE-LEBRUN.

When the growths have fully matured and ripened it is best to lessen the root moisture by degrees, until in winter the plants are kept quite dry; so dry, in fact, that the pseudo-bulbs often shrivel to half their proper size.

Very early in the new year small growing shoots will appear at the base of the pseudo-bulb, but this must not be taken as a sign that moisture is again required. As a matter of fact, if water is supplied too quickly many of the plants will refuse to flower, but in a few weeks the tip of a flower spike can be seen in the point of the growth, and then water in plenty may be given to replenish the wasted bulbs, and to cause them to push the flower spike strongly. The way these grow is very remarkable, a few days after the first watering seeing an immense difference in their length.

Later, when the flowers are almost fully developed there is a risk of spotting these unless water is very carefully given. A thorough soaking in a pail or tank just before the flowers commence to unfold, and holding up the spikes while doing so, will carry them through the flowering period, and is better than risking watering from a pot. Newly imported plants of this species are very easily and quickly established, flowering often on the imported bulb, and rapidly making choice specimens. They should be potted first of all in clean crocks, afterwards given peat and moss in the usual way.—H. R. R.

London Gardens over Fifty Years.—No. 22.

Deptford.

THE name of Deptford does not suggest to us anything agreeable; we may link it with Rotherhithe, Wapping, and other low-lying places along the Thames, as offering no attractions to the gardener or the Nature student. Yet this unpromising suburb of London has improved of late, and even if there is less open ground than was to be seen fifty years ago, it is assuming a more cheerful aspect. One notable fact is, that after escaping various perils, a portion of the ground which Evelyn owned in the seventeenth century has been preserved for the public benefit. At Deptford it was that he had his little villa, an extensive garden, partly wooded, and "a pretty little greenhouse with an indifferent stock," so Gibson says. The nineteen acres of Sayes Court are the property of W. J. Evelyn, Esq., a direct descendant of the worthy author of "Sylva" and the "Gardeners' Almanac." Truly a pioneer of progress was Evelyn, for he also published "Fumifugium," in which he advised the removal of all smoky factories at least five miles from London, and suggested the planting of "fragrant nurseries and gardens" along the river near the City.

John Evelyn.

This good old gardener would, I am sure, be glad to see his Sayes Court benefiting the Deptfordians, and wish they had now all the 100 acres which was its original extent. When he took the place most of the land was open fields, a small part of it orchard. Evelyn must have soon planted extensively, for Lord Keeper Guildford called Sayes Court an example of his friend's book on forest trees. There are possibly trees still growing thereabout which are the descendants of Evelyn's plantations, but we cannot expect to find any trace of the glorious Holly hedge he was so proud of. Some time must have been required to produce this hedge, 9 feet high, 5 in diameter, and 400 feet long, proof against beasts and trespassers. It was not through this hedge the Tzar of Muscovy had himself wheeled, but one less thick; even then he must have been well scratched. Perhaps he suffered from some sort of skin irritation which the Holly prickles relieved. Tzar Peter also greatly damaged the wall fruit trees and killed several choice Phyllyreas, which it was then the fashion to develop into tall standards. Probably what is known as Deptford Park, Lower Road, was a part of Evelyn's grounds; this is a space of 17 acres, much of it laid out with grass. It was opened on Whit-Monday, 1897, by Dr. Collius, Chairman of London County Council.

Vanished Rivers.

Truly, in the good old times it was such fertile land at Deptford as rejoices the gardener, crossed by the Ravensbourne and sundry smaller streams that ended in the Thames. That river, London's "ancient highway," by its proximity was convenient for the conveyance of vegetables to market, and nearer than the metropolis were the numerous vessels of its port, where the produce of the fields found ready purchasers. Hence Deptford Rhubarb, Asparagus, Cucumbers, Onions, and various Cabbages had their repute fifty years ago, but the market gardeners have departed. Even at New Cross adjacent, about which I remember a large extent of open ground, the Directory now records only a single firm, that of Neve Brothers. Besides gardens New Cross had its fields of Clover and Lucerne, where butterflies sported or bees gathered honey. Newman, the great entomologist, tells us how he entered upon the chase of a clouded yellow butterfly amongst the Clover, and it went over into a market garden, so he pursued it there. But he was trespassing, and he himself was followed by a party of "female Hibernians," whose voices and gestures made him beat a rapid retreat.

Deptford's Nurserymen.

South of the Thames, the name of Myatt was at one time as familiar as that of Bagley or Gunter in the west of London, and a representative of this well-known family of gardeners may yet be found near Swanley, in Kent. Others, formerly well known about Deptford, were the Shephards, the Masons, with Messrs. Bryar, Reading, and Simpson. Mr. W. Brown owned a place expressively named Cold Blow Farm, and also land along Woodpecker Lane. The inhabitants of Deptford, half a century ago, had little taste for flowers, nor the means of purchasing them; therefore nurseries did not spring up about that locality. But New Cross had one, or possibly two, nurseries early in this century, perhaps from its being adjacent to one of the important roads into Kent and Surrey. It is said that the first nurseryman there was Cormack, the business being continued later by his sons. The place had some repute in London's time; its position is now unknown, for it has been closed many years, and left no trace.

Recently there has disappeared the nursery of Mr. J. Orsman, of Florence Road; this must have been nearly as old as that of the Cormacks. Manor Farm, Lewisham Road, was for a good while occupied by one of the Myatt family, vegetables and flowers were under cultivation here. In 1875 a sale took place, many thousands of Lilies, and various plants besides, were cleared, the land being required for building.

Hatcham Park, not far distant, is said to have had a good garden, while it was the residence of Mr. Hardcastle, about the middle of the century. What one might call rural signs are not unfrequent about New Cross, such as the "Dewdrop," the "Grasshopper," and the "Rosemary Branch." The last of these would indicate that herbs were cultivated hereabout. One of the facts we note in strolling at New Cross is the prevalence of Birches, a tree which evidently thrives on Surrey Hills. The Telegraph Hill, Hatcham, was secured as an open space in 1895, nearly £4000 being spent upon the laying out.

Churchyard Gardens.

Various steps have been taken to preserve intact such smaller open spaces as exist about Deptford. The "God's acre," for such it was literally, of St. Nicholas' Churchyard has been converted into a public garden; so, too, have the three acres of St. Paul's, but in it the gravestones are not removed. Amongst other churchyards adjacent to the river which have been greatly improved of late is that of St. Alphege, Greenwich, which was formally opened by H.R.H. the Duke of Cambridge in June, 1889, and is much frequented by the inhabitants. Then Mr. Passmore Edwards provided the funds for the laying out of the four acres of St. Mary, Woolwich. This ground is somewhat elevated, having fine views of the Thames. It was opened by H.R.H. the Duchess of Fife, in May, 1895. Nearly opposite Deptford, in the Isle of Dogs, the London County Council formed a small riverside garden that year, which proved a boon to the poor dwellers on that unattractive island, said to have been named from the dogs kept there by the kings who went hunting in the woods about Greenwich.

Greenwich Park.

Greenwich Park has for a long time had many visitors from far and near, a roll down the hill on Whit-Monday being esteemed the climax of enjoyment formerly—less so now perhaps. As a park, it is in some respects unlike all the other London parks. It used to be nearly destitute of flowers, except wild ones and a few herbaceous species; but by planting and bedding out, part has been made to appear more like a garden. The gales of recent years have been hard upon some of the older trees, for Greenwich Park surpassed even Kensington Gardens in its display of these. Especially are its fine Elms and its Spanish Chestnut avenues worthy of remark. Near the Observatory are some notable Scotch Firs; evidently at the first planting most of the trees were put in too thickly. By the Queen's permission 15 acres were added to this park in 1898, which had previously been reserved as the ranger's private grounds. Within a short walk again of Deptford and New Cross are the "Hilly Fields," Brockley, a lovely and elevated tract of 45 acres, upon which £5000 was spent in 1896. A useful little garden on the Ravensbourne, at St. John's, was opened about fourteen years ago by the late Duchess of Teck. Farther up the stream, a long strip of about 47 acres forms the Ladywell Recreation Ground.

New Southern Suburbs.

Amongst the suburbs that have grown rapidly this century a high place must be given to Lewisham. Since 1851 its population has increased from 16,000 to 104,000, the majority of them people fairly well off. As a consequence nurserymen and florists have increased in the district, we can reckon up ten, and over a dozen more about Lee and Blackheath adjacent. But we should seek vainly for the name of Willmott & Co., a firm that was the oldest existing at Lewisham, where they held a large extent of land, much of it being devoted to fruit culture. This nursery was founded by John Russell 150 years ago; he was highly successful, making a handsome fortune; he died in 1794. Lewisham formerly had many orchards of Cherry, Apple, and Pear, which were interspersed with fields of Strawberries. These have been cleared, mostly to make room for houses and streets, but, as is very apparent to travellers, much fruit is raised along the district farther east towards Dartford, in proximity to the S.E.R. loop line.

When mentioning some places in the Surrey suburbs of London, I omitted to speak of Dulwich, but a few miles from Charing Cross, yet a part of our century could extol its sylvan wilds, and rejoice that it was unspoiled by "barbarous art," whatever this may mean. But the builder has been busy; yet I found, not long since, a remnant of the old wood, and, by the generosity of the College governors, its park of 72 acres is secured for the public use permanently. The nursery of Messrs. F. T. Smith & Co. of West Dulwich has been carried on for half the century, and is an important establishment; some 7 or 8 acres, mostly under glass, are occupied by a great variety of exotics. Many of these are largely grown for producing seed only.

At Forest Hill, where if not a forest actually, a large wood existed in the memory of old Surrey folks, we find the nurseries of Messrs. Laing & Sons, who have carried on for some time an extensive trade in flowers, vegetables, and implements. Also the well known firm of Carter & Co. has land here, and two or three other nurserymen. Roupell Park Nursery, Norwood Road, is one of the few remaining near Norwood, the firm of Peed & Sons was formerly at Streatham.—J. R. S. C.

Seasonable Hints on Florists' Flowers.

Auriculas.

It is with somewhat of a sinking heart that I write what may be almost the farewell to the flowers I have so many years loved and cultivated. They were amongst those which in very early days I regarded as great favourites, and although there have been times when from one circumstance or another I have been obliged temporarily to abandon their cultivation, yet I have recurred to them again and again, and during the past thirty years they have had a very high place in my regard. I never had so large or good a collection of them as during this time, but there has been always one great drawback, there was no one in my immediate neighbourhood who knew anything about them, and it is but dull work to cultivate a flower when you can show them to no one who appreciates them but yourself. Some people ask to see your collection perhaps as a mark of politeness or curiosity, and when they have seen them they are ready to exclaim how pretty or how curious, but are unable to enter into any discussion of their merits. And now, alas! failing eyesight makes it imperative upon me to abandon the culture of the Auricula. It is a flower whose beauty depends upon points of form and colour, which can only be thoroughly appreciated by one whose sight is good. My collection is consequently now very much reduced, and will have to pass to some one who will be better able than I to appreciate and to cultivate them. This is a grievous trial for any connoisseur of some fifty years standing.

Regarding Auriculas, they have been very late in flowering this year, and should soon be repotted. A simpler form of compost is that which is preferable, and is now generally followed—namely, one-half of turfy loam about a year old, one-quarter well-rotted cow manure, one-quarter leaf mould, with a good sprinkling of sharp white sand. The tap root should be shortened, offsets which show any sign of root should be removed and planted in small pots, being ranged round the edges where practicable. In doing this they should be firmly potted, watered, and then placed in a close frame in a cool spot for a few days, being subsequently placed in the frame where they are to remain for the summer. These frames should, of course, face the north, in a situation clear of the drip of trees and shaded from hot sun. Attention must be given to cleanliness, and if aphides are present at all the plants should be cleansed. Perhaps the best plan is, before the process of repotting commences, to place them in a cold frame or pit and give them a fumigating with one or more of MacDougal's fumers. These are a wonderful improvement upon the old plan of fumigating with tobacco paper or cloth, and save the operator all the unpleasantness of the old system. Alpine Auriculas are not of so delicate a constitution as the edged varieties, and do not perhaps require such careful handling. They are also more inclined to give offsets, so that a collection is sooner got together. They have the advantage, too, of being much more easily raised from seed, and anyone who wishes to raise new varieties has the satisfaction of knowing that if they do not come up to the standard required they will make excellent border plants.

Carnations and Picotees.

Those who have wintered these beautiful flowers in pots and have planted them out in beds will now be preparing for the next operation, that of staking them. As far as I can judge, they have wintered well,

and if they have not been coddled will not mind the bitterly cold east wind which we are now experiencing. I see some of the shoots are spindling up for bloom, which I think somewhat premature, and when this is the case stakes should immediately be put to them. Here again we find the more correctly coloured and beautifully shaped flowers giving place to others more irregular both in colouring and form, but at the same time better adapted for the ornamentation of the garden. Very few persons now, I imagine, grow and bloom them in pots; but what pleasure plants so grown were to one in earlier days! and I question if anyone who follows the modern system can experience the delight which came to those who watched the development of each flower with its beautiful and regular marking.

Gladiolus.

It is too soon to do much with the beds of these bulbs, and all one has to do is to keep them free of weeds and the surface gently stirred. I have seen that the bulbs of the Lemoinei section, which have now

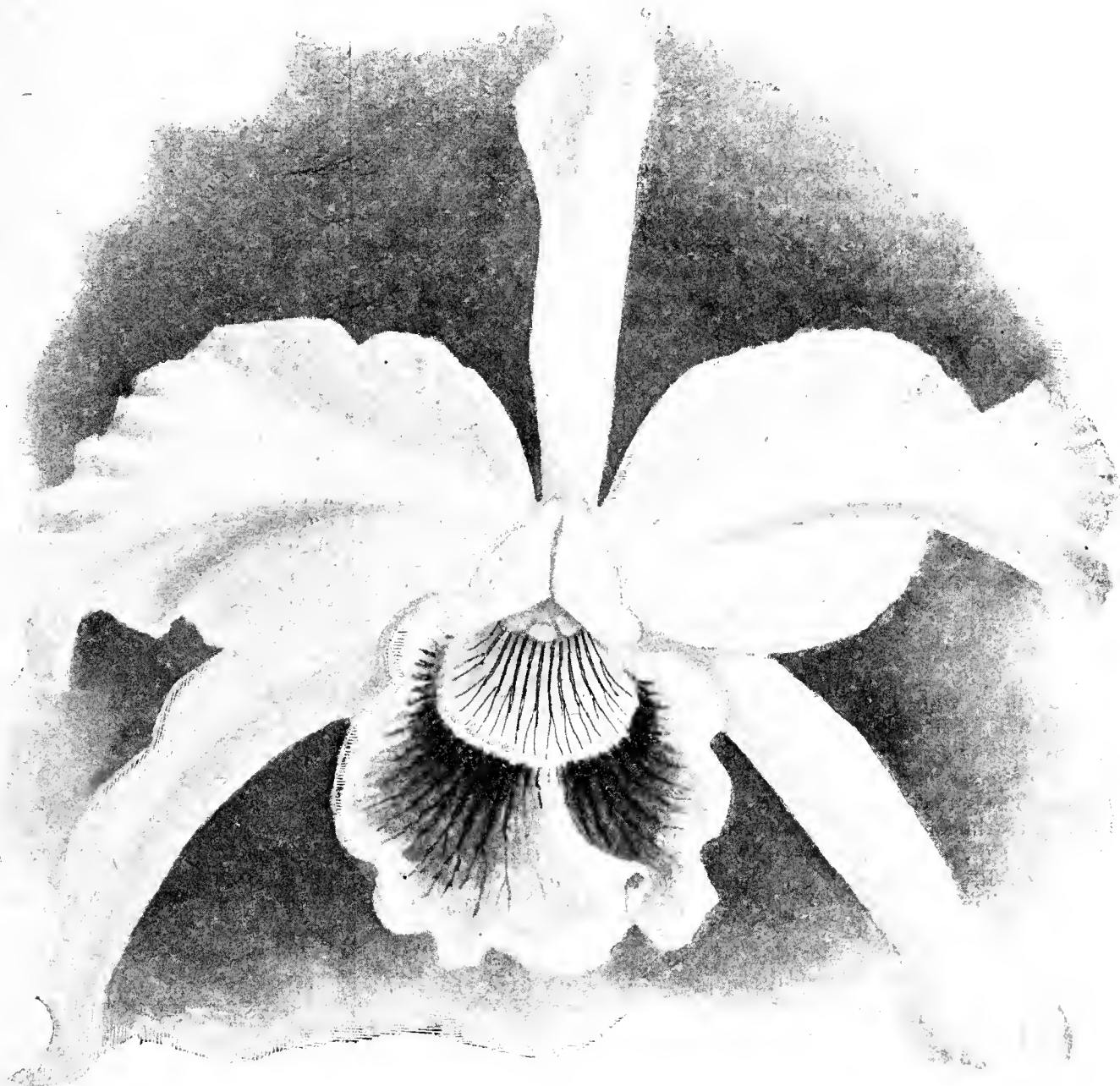


FIG. 122.—LÆLIA PURPURATA LITTLEIANA. (See page 453.)

been in my border seven or eight years, are rapidly pushing their way. It will be well to see before the shoots become too long that supports are applied to them, as if left to themselves they are very apt to be broken off by the high winds.

Pansies.

Here, again, a revolution has taken place; the old Show Pansy has been superseded by what are called the Fancy varieties. These originated abroad; but, like many of our florists' flowers, attained their highest perfection amongst our home fanciers. The flowers are of great size and brilliancy, and very irregular and fantastic in their markings, but they are quite as regular in form as the old Show varieties, and certainly more hardy in their constitution. I do not think, however, that the south of England is favourable to growing them in perfection, our summers are too hot and dry; and to see them in perfection one must travel to Scotland, or to the cool glades of Yorkshire, where climate and soil are both in their favour. The beds should now be kept clear of weeds, and where increase is desired

cuttings should now be taken, avoiding all pithy growth and choosing the small-sized shoots which come up at the base of the plant. It will be well, however, where much increase is desired, to cut off all the flowering stems which engender mildew, and trust to the plant throwing up shoots which will become young plants by-and-by.

Pinks.

The attempt to restore these once favourite florist flowers to popularity has not met with any success, but those who still grow them will now be thinking of propagation. They are somewhat difficult because they are so apt to damp off, and pipings, as they are called, as soon as they are firm enough, may be taken off and placed under bell-glasses in some shady position. The glass ought not to be removed for some time, and should any of the pipings damp off they should be removed lest any of the others be affected.

Ranunculus.

I am afraid this is another trying season for these beautiful tubers. They love moisture, and they have had but little of it lately. Should rain not speedily come the beds must be well watered, giving them a thoroughly good soaking, applying water between the rows and not over the bed. Here again one has to mourn over the lack of appreciation of these beautiful flowers, and the beds which I used to see in my boyhood and early manhood have to be looked for in vain.

Roses.

We are likely, I think, to have a very late flowering season, and the cold biting easterly winds which we are now experiencing are likely to exercise an injurious effect on them. The beds should be carefully gone over every second day and the maggot carefully hunted out and destroyed. If this maggot gets into close quarters with the bud it is sure to be spoiled. I have not as yet seen any green fly, but when it does come the plants should be syringed with water containing Gishurst compound or some other insecticide, and after this syringed with pure water. Those who wish to have really good flowers will now also disbud their plants, leaving only one bud to a shoot. It is necessary also to place sticks to any rapidly growing shoots to prevent their being shaken by the wind. Our exhibitions begin next month, and their prospects are not at present favourable, but everything will depend on the next three or four weeks. In the meantime let us hope that more favourable weather will follow this cold spell.—D., Deal.

Rhododendron Forsterianum.

THE group of hybrid Rhododendrons which has originated through crossing such lovely species as *R. Edgeworthi*, *Veitchi*, and *formosum* contains a large percentage of high-class plants, all of which are well worthy of extended cultivation, making as they do delightful pictures of grace and beauty for the greenhouse or conservatory in spring. The title of Queen of this beautiful group may well be accorded to the one under notice, for it quite eclipses any other variety in size, form, and beauty. It is a hybrid between *R. Edgeworthi* and *R. Veitchi*, and appears to be very scarce, though it has been cultivated in a few places for a number of years. The leaves are intermediate between the two parents, though bearing no very striking resemblance to either, the well-marked nerves of *Edgeworthi* being present, but very little signs of the brown felt on young wood and the under sides of the leaves which is characteristic of that species; in this respect the *Veitchi* parentage can be traced.

The flowers are upwards of $5\frac{1}{2}$ inches across, usually borne in trusses of three or four flowers each, or sometimes six on an extra strong shoot. The tube is very short, the petals spreading almost from the base. They are pure white with a lemon mark at the base of the upper petal. The margins are very prettily undulated, which adds greatly to their beauty. When seen from a distance the wide flowers with their prettily fringed margins are suggestive of the fully expanded blossoms of a Lily. An additional recommendation for this plant is the delicious perfume which accompanies the flowers, a few blossoms scenting a large house. When growing it should be kept tied in, as the growth is apt to become straggly. As it is a very free flowerer the buds should be thinned or the plant will soon become enfeebled.—W. D.

American Apple Outlook.—From advices to the "American Agriculturist" in response to special inquiries sent out, it appears that the prospect for the coming Apple crop is good in most leading sections. The blooming period has brought much promise, and so far as conditions at this early stage amount to anything, prospects are favourable for a liberal set of fruit.

Potato Culture.

MR. MOLYNEUX is quite correct in saying there is no excuse for growing inferior Potatoes when there is such a wealth of variety from which to select. Inferior quality, however, comes even from good varieties, when these are planted on land that does not suit them. As an illustration I might mention that these gardens once possessed a very poor character for Potatoes, their quality in the main being such that no one could eat them without complaining. This was attributed to the heavy manuring given the soil for growing them and other vegetables. When I took charge there were some forty sorts in stock, some of them very good in quality, but the maincrop forms grown in the greater bulk—Windsor Castle, Sutton's Seedling, Satisfaction, and Abundance—were those of which complaint was made the most freely. Obviously the remedy applied for—a better standard of quality—was a rigid selection of those that were found to suit the land, as proved by the cooking test, and the discontinuance of the growth of those that did not please. The question, at the present, of quality is never contested, or complaint made; indeed, the Potato has a character as good now as it was bad under the old order, which is, and must be, satisfactory to all concerned.

My mainstay is Snowdrop, with a few Beauty of Hebron, both of which are as good as can be found, and I do not think it possible to make the ground too rich for them, at any rate not with decayed horse manure. In a good Potato season I have lifted over a sack from each perch—lug it is called in the West—good sound produce from Snowdrop seed. The same variety is much favoured by cottagers, and this as well as Beauty of Hebron, form, in some cases, their main, as well as their late crops, and they keep soundly until late in spring when carefully stored. My latest introduction into the main crop or garden section is Syon House Prolific, and this promises both in point of quantity and quality to hold a favourable place. In the field Snowdrop fails because the culture is not sufficiently good for its constitution. The plough does not break the soil deeply enough, and the farmers' methods cannot be expected to equal spade work in the garden. Maincrop I have found to do best, being good alike in quality, free from disease, heavy cropping, and the tubers of a most serviceable size. During the whole winter I did not find a single diseased Potato, a fact that contributed largely to the extension of the supply and reduced labour.

In gardening as in every other vocation men have methods differing in detail one from another, and in Potato planting this often applies. While Mr. Molyneux will adopt a dividing space of 13 inches by 2 feet 3 inches, others will go to 3 feet between the rows and from 16 to 18 inches between the sets for maincrops. I have seen Snowdrops planted at the latter distance which completely hid the ground, and smothered Brussels Sprouts put out between them, and the crop, it need scarcely be said, was proportionate to their growth. I have not been able to compare artificial with natural manures so favourably spoken of by Mr. Molyneux for Potatoes, but I can point to land that has had neither for many years except that procured by burning up all garden accumulations, and the ashes and decayed vegetable matter spread over the ground at digging and planting time, and this not a heavy dressing by any means. I have found under ordinary farm planting that the rows are better with less space between them, because when subject, as they often are to periods of drought, the soil dries rapidly when exposed to the sun; with closer rows the sun is kept out from the shade afforded by the haulms.

Among early sorts I find Ringleader, Sharpe's Victor, Carter's First Crop, Sutton's Harbinger, The Sirdar, and Veitch's Ashleaf, are all good and reliable, and a greater range of variety among the first earlies is both interesting and instructive. Some are hardier than others in their foliage, suffering less from frost visits. I have seen a border planted with several early sorts, which after a late frost distinctly showed how varied was their resistance. While some would be badly damaged another would have almost escaped unhurt—that is, of course, after a moderate frost.

Seed-saving of these first earlies often presents some difficulty in getting sufficient stock for the next year's planting. I am able to get over this quite easily by allotting a portion of the border for planting the small tubers left. These will give tubers of a good size, which are stored as they are dug, and thus the trouble of selecting from those in daily use is entirely overcome, and all anxiety for the future removed. The ground is not manured for these unless it be very poor. There is always a proportion of small ones remaining after the selection of planting tubers has been made, and by setting these aside for the purpose more than one object is fulfilled, each of a useful kind. It sometimes happens when dependence is placed on small ones selected from the everyday digging that the seed stock falls short of the requirements of the garden. It is, therefore, good policy to provide against such contingencies, and plant the small, which would otherwise be thrown away as useless.—W. STRUGNELL, Rood Ashton.

NOTES & NOTICES

Recent Weather in London.—The weather during the past few days has been more pleasant and genial. Some steady rain would now be highly appreciated by the majority of metropolitan gardeners, and would do much good to all vegetable and fruit crops, as well as to the bedding plants, that are being rapidly inserted. The sun has had considerable power of late, and the ground is fast becoming dry. At the time of going to press on Wednesday it was dull and cold.

Gardening Appointments.—Mr. T. Whitfield has been appointed head gardener to E. Rhys Wingfield, Esq., Barrington Park, Burford, Oxon. Mr. G. H. Poole, late foreman Cleve Hill, Downend, has been appointed head gardener to W. H. P. Jenkins, Esq., Frenchhaigh Park, Bristol, Glos. Mr. Stephen Clarke, Trengwainton, Heanor, Cornwall, has been appointed, through Messrs. J. Veitch & Sons, head gardener to General Palmer, Glen Eyrie, Colorado Springs, U.S.A. Mr. Clarke is succeeded by Mr. Westcott, of Penalvern, Penzance.

Canada and the San Jose Scale.—The brief period during which the Canadian Government suspended the operation of the San José scale law and received nursery stock at certain ports of entry, fumigating the stock before its transportation was continued, necessarily restricted exportations, but assurances are offered of a further period of two or three months in the autumn, which will permit of the transaction of considerable business in the Dominion.

"I am a Boer."—Miss Dorothy Chute, a young Irish lady, was fined £3 11s. 6d. at Littlehampton recently for painting "I am a Boer" on a gate belonging to a nurseryman at Wick, near Littlehampton. Prosecutor said he owned 40,000 feet of glass close to the road. Defendant admitted painting the words because the prosecutor did not put out a flag in celebration of the relief of Mafeking. Col. Middleton, the chairman of the Bench, said he would not be called a Boer for £100. Defendant's conduct might have led to the prosecutor being lynched in the present state of public feeling or his property ruined.

"One and All" Flower Show.—This has now become one of the events of the horticultural world, and this year's show will, it is hoped, range in excellence with its predecessors. As usual, the exhibition will be in the Crystal Palace, and the selected dates are August 17th and 18th. There are upwards of 300 classes, which, needless to say, embody every crop that can be produced at that period of the year. This exhibition is one of the most admirably managed in the kingdom, and has a peculiarly high educational value from the fact that it encourages absolutely all classes of growers to compete. The honorary secretary is Mr. E. Owen Greening, 92, Long Acre, London, who will forward schedules and all necessary information to applicants.

The Amateurs' Practical Garden Book.—This publication of Messrs. Macmillan is one of their Garden Craft Series, which form a group of seven excellent portable manuals, prepared by Professor Bailey, of Cornell University, U.S.A. It deals in alphabetical sequence with the simpler garden operations and plants regarding which the young gardener may be seeking information, and also offers solutions of sundry difficulties inevitable in the pursuit of horticulture. There is, however, nothing in its design savouring of guidance. It seems to be intended as an "Enquire Within" for those who already have had a little practical experience of the art, and know something of flowers and vegetables. It is clearly and pleasingly written; and serves as a useful *résumé* of elementary gardening, which will be conned at leisure by those desirous of refreshing their memories. The cultural directions are short and to the point, but as they have reference to the climatic conditions prevailing in the north-east section of the U.S.A., they must be taken with reservation here. Many of the familiar names, too, of plants are of the American vernacular. Students and young enthusiasts will find it a very useful work to have, and its price, which is 3s. 6d., brings it well within the means of the class of readers to which it appeals. The style, like that of all books proceeding from this house, is unexceptionable.

The Horticultural Club.—We learn from the secretary, the Rev. H. H. D'Ombrian, that the next meeting of this society will take place upon the 19th June, and not upon the 5th as originally announced, owing to its coincidence with the Whitsuntide holidays.

Royal Horticultural Society.—The next fruit and flower show of the R.H.S. will be held on Tuesday, June 5th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. G. Henslow, M.A., at three o'clock.

Draba gigas.—This very dwarf growing perennial is useful for the sunny part of the rockery. The thick, close growing, deep green leaves hang over the stones most effectively; the pure white flowers, too, are showy even at a distance. Although it grows freely it does not flower profusely for a year or two until it is thoroughly established in a good position.—B.

Marrowfat Peas.—Many visitors to the recently held Temple Show will remember the cone-like mounds of Green Peas that were arranged by Messrs. Sutton & Sons, and would recognise their great excellence for such an early date. We now learn that H.R.H. the Prince of Wales (president of the Gardeners' Royal Benevolent Institution) saw and admired them, and was graciously pleased to accept some for the Royal table.

The Percolation of Water.—The percolation experiments made at Rothamsted for about twenty years have shown that in the winter months more than half the amount of rain penetrates into the soil and is available for springs, while in summer this amount only reaches a quarter that of rain. Three gauges were used, each having an area of one-thousandth of an acre. The water was collected at three depths, and was always greater in quantity at 40 inches than at 20 or at 60.

Grapes from Spain.—Few people are aware of the quantity of foreign Grapes that come to this country. Take the exports from the small port of Aguilas, in Southern Spain, as an instance. We are informed that in a short time the exportation of Grapes will reach what before the epoch of the phylloxera might be considered its normal standard—namely, 1,000,000 barrels of Grapes annually. This year, including half and quarter barrels (after reduction to whole barrels), there have been 836,429 barrels of 55 lbs. each, or the astounding amount of 46,003,595 lbs. of Grapes.

Is It Manna?—A strange occurrence is reported by the "Delhi Post" concerning large tracts of Bamboo forest in Chanda, in the Central Provinces of India. Quite recently, and for the first time in the history of these forests, a gummy substance has been exuding from the Bamboo trees there. The supply of this is reported to be so abundant that the famine-stricken people are said to be making free use of it as a food. A quantity of this gum has just been sent to Dr. Watt, reporter on economic products, for investigation. Meanwhile, it is said to be a palatable resinous substance, sweet in taste, and resembling the Egyptian fungus supposed to be the Scriptural manna.

Kew Guild Dinner.—On Tuesday, May 22nd, the first annual dinner of the Kew Guild was held at the Holborn Restaurant, and never in the records of Kew has such a representative body of her sons been gathered together. At 7.30 the chair was taken by the director (Sir Wm. T. Thiselton-Dyer, K.C.M.G., C.I.E.), and slightly over 100 sat down. Of the number present about two-thirds were past Kewites, representing all parts of the British Isles, the continent, and the colonies. After an excellent dinner the chairman proposed the toast—"The Queen"—referring in a few words to the great part the Queen and other members of the Royal Family had played towards making Kew what it is to-day. Afterwards the same gentleman proposed "The Kew Guild," speaking with great enthusiasm of the beneficial effect the Kew Guild had had on Kew men, uniting all old Kew men in a bond of friendship and sympathy and keeping all its members in direct communication with each other by means of the annual journal. This toast was replied to by Messrs. G. Nicholson and W. Watson. Other toasts were—"Present Kewites," proposed by Mr. W. Pettigrew, and replied to by Mr. Girdham; and "Old Kewites," proposed by Mr. Dallimore, and replied to by Mr. Latham of Birmingham and Mr. Udale of Worcester. The toasts were interspersed with music, songs, and glees. At 11.30 the meeting dispersed, everyone regretting that the time had not been longer, and all expressing the opinion that they had never spent a pleasanter evening.

New York Society of Horticulture.—A representative gathering of horticulturists was convened a short time back at the New York Botanical Garden to consider the advisability of founding a horticultural society in New York. The Committees of the Council shall include:—(1) a Floral Committee; (2) a Fruit Committee; (3) a Vegetable Committee; (4) a Forestry Committee; (5) a Membership Committee; (6) a Finance Committee. These resolutions, says an American contemporary, and others dealing with rules of membership were accepted and referred for consideration to a temporary Council, when the report of the nominating Committee for permanent officers will also be received.

Eastbourne Flower Show.—Mr. Henry J. Capon, 75, Terminus Road, Eastbourne, has sent us the schedule of the show to be held in the grounds of Compton Place on Wednesday, August 15th, under the patronage of the Duke of Devonshire. There are seven dozen classes divided into three sections, which are open to all, open to amateurs and gentlemen's gardeners, and open to Eastbourne cottagers respectively. Generally speaking the prizes are good, and should insure an excellent display of produce, especially when we consider that practically every class of grower is catered for. The principal class is for eight stove and greenhouse plants, for which £14 are offered in three prizes of the respective values of £7 10s., £5, and £2 10s. The secretary, as above, will forward schedules and all necessary information.

Beckenham Horticultural Society.—On Wednesday, July 25th, this energetic society will hold its summer show in the Croydon Road Recreation Grounds, Beckenham, and considering the manner in which its committee is diffusing valuable information on gardening, we trust it will find strong support. The schedule which has been sent by the honorary secretary, Mr. G. R. Stilwell, Stanmore House, Southend Road, Beckenham, is most comprehensive, and brings the possibility of exhibiting within the reach of all growers. The prizes are not very valuable, but it is nevertheless anticipated that the exhibition will prove an excellent one in all respects.

The English Tulip.—A lecture was given before the Beckenham Horticultural Society on Friday, May 25th, by Mr. A. D. Hall, entitled "The English Tulip, its History and Cultivation," which proved to be one of the most interesting and instructive of the session. It was introduced at the close of the sixteenth century from Turkey, where some 153 varieties were catalogued, and was taken up by the Dutch, who, however, failed to make much improvement. English growers, from 1830 to 1850, when it was considered to be the flower of the day, made rapid strides, producing varieties that rank amongst the best of the present period. Seed sown takes six years to bloom, and the flowers are selfs or breeders, which at any time may change to perfected or rectified flowers, and once they change there is no reversion. Any good soil will grow them, and no insect pests trouble them. Planted in November they bloom in May, and should be lifted by the end of June. The particular characteristics of the various flowers were explained and beautifully illustrated by the bizarres, bybloemens, roses, and breeders from the National Tulip Society's Show. Messrs. Barr & Sons sent a collection of Darwin Tulips, and a hearty vote of thanks was accorded to Mr. Hall. —M. W.

Shirley Gardeners' Mutual Improvement Association.—The monthly meeting of the above society was held at the Parish Rooms, Shirley, Southampton, on Monday, the 21st inst., when Mr. B. Ladhams presided over a good attendance of the members. The evening commenced with a very interesting and practical discussion on flowering shrubs and trees, which was opened by Mr. S. Verdon, of the Red Lodge Nurseries, Bassett. He first dealt with shrubs and shrubberies, and then referred to some of the examples exhibited, of which there was a splendid display from the nurseries of Messrs. W. H. Rogers and Son, Ltd. A good debate ensued, in which several members took part, including the chairman, Messrs. Wilcox, Key Allen, F.R.H.S., Cleverley, Ekless, and Jones. Mr. Jones suggested that fruit trees should be more extensively cultivated on the outside of pleasure grounds. There was as usual a grand display of flowering plants exhibited from the Shirley Nurseries, whilst Key Allen, Esq., F.R.H.S., of St. Auben's, Bitterne Park, was awarded the society's certificate of merit for a very nice collection of Sweet Peas and a grand dish of Pea Tremendous. Three days later, on Thursday May 24th, the members had their annual outing, visiting London for the great Temple Show, whence they returned at midnight, greatly pleased with all they had seen.

National Rose Society.—The honorary secretaries of this important society favour us with schedules of the three forthcoming shows which are to be held at Salisbury, June 27th; Crystal Palace, July 7th; and Birmingham, July 19th, in addition to the show in conjunction with the Royal Horticultural Society on July 3rd. They also desire us to announce that a special general meeting of the members will take place at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, on Tuesday, June 5th, at 3 P.M. precisely, to elect an honorary treasurer in the place of Mr. T. B. Haywood, deceased.

Kidderminster Horticultural Society.—The schedule of this society, whose exhibition is to be held at The Larches on August 7th, stands alone as regards arrangement. As far as we can ascertain from the multitudinous interleaved advertisements there are 106 classes, and we trust intending exhibitors will allow themselves ample time to find what they specially require, and the rules appertaining thereto. We might suggest that a less involved system of arrangement would be appreciated by growers as well as by the reporters, who desire in writing of the show to follow the schedule. The prizes amount to about £100, exclusive of a silver challenge cup and medals. It is not made clear whether the challenge cup is offered for a group of plants or for table plants, but we may reasonably suppose it to be for the former. The honorary secretaries are Messrs. Rogers and Whicker, Brookfield, Blakebrook, Kidderminster.

Some Interesting Statistics.—The dutiable imports of plants, shrubs, and Vines into the United States amounted to 47,666 dollars in January, 1900, against 35,702 dols. in the same month of 1899. The free imports of seeds amounted in January, 1900, to 182,622 dols., against 107,657 dols. in January, 1899. The dutiable imports of seeds amounted to 121,317 dols. in January, 1900, against 67,401 dols. in the same month of 1899. The exports of seeds to other countries amounted to 435,103 dols. in January, 1900, against 301,103 dols. in the same month of 1899. The countries to which the United States exported seed were the United Kingdom, which received shipments to the value of 145,730 dols. in January, 1900, as against 125,872 dols. worth during the same month of last year. Shipments to France amounted to 21,679 dols. in January, 1900, as against 3658 dols. in January last year. Germany imported seeds from the United States to the value of 170,703 dols. in January, 1900, against 62,616 dols. in January, 1899. Other European countries received shipments to the value of 50,869 dols. in January, 1900, as compared with 49,980 dols. in January of the preceding year. A decrease is to be noted in the exports of seeds to British North America, being valued at 37,650 dols. against 48,306 dols. in January, 1899.—("Florists' Exchange.")

Chelsea "Physic Garden."—Probably there is no garden in England of greater interest than the Apothecaries' Garden at Chelsea, founded in 1673. The objects with which it was started were quaintly set forth by Sir Hans Sloane when he granted the ground to the Company of Apothecaries in 1722, and demanded that "the said garden may at all times hereafter be continued as a Physick Garden, and for the better encouraging and enabling the said society to support the charge thereof for the manifestation of the power, wisdom, and glory of God in the works of the creation, and their apprentices and others may better distinguish good and useful plants from those that bear resemblance to them and yet are hurtful, and other the like good purposes." The garden is about three acres in area, and has contained among other historic plants two Cedars planted in 1683, then only 3 feet in height. When they were measured again in 1766 the trunks were more than 12 feet in circumference, and the branches extended 40 feet in diameter. The garden contains a large greenhouse, the heating arrangements of which seemed to have caused much wonder in early days, for Evelyn, writing in 1685, remarks: "What was very ingenious was the subterranean heate, conveyed by a stove under the conservatory, all vaulted with brick, so as he (the keeper) has the doores and windows open in the hardest frosts, secluding only the snow." Last year it seemed not unlikely that this historical garden might fall a prey to the builder as the cost of maintenance entailed on the Society of Apothecaries was great, so that it is very satisfactory to learn that new trustees, those of the London Parochial Charities, have been appointed, and that it will continue to fulfil the purposes for which it was founded—the educational and scientific study of botany. It will be remembered by all readers of the *Journal of Horticulture*, that Mr. Thomas Moore, Editor of the "Florist and Pomologist," was for years curator of this garden.

The Oak and the Ash.—A record kept for the past eighty-four years has shown the accuracy of harvest forecasts drawn from the leafing of the Oak and the Ash. This year the Oak was the first to leaf, which indicates a dry and hot summer and a bountiful harvest, just as in 1898, when the Oak preceded the Ash in leafing several weeks.

Nature's Own Secret.—The quality which gives value to many great vineyards has never been explained. Two fields beside one another may have the same exposure, slope, and chemical constitution, and yet one will produce wine of first quality and the other wine of inferior grade. In the Rothschild vineyard near Bordeaux, for example, only a waggon-road divides the choice section which produces a world-famous vintage from a tract that is comparatively valueless.

Open Spaces in South London.—The grounds of the Primate's Palace at Lambeth were opened to the public on Saturday. They will be known as "Archbishop's Park." The main entrance to the park is in Lambeth Road, and there is a side entrance in Paris Street. The work of laying out the dismal churchyard of Christ Church, Blackfriars Road, as a garden has now been practically completed, and it may be hoped that one more sorely needed open space will be shortly available for the children of this crowded district of London. The graveyard is a large one, and has been tastefully arranged, a fence dividing the garden from that portion of the churchyard which actually adjoins the church. It is interesting to remember that this spot was once a private garden belonging to Queen Elizabeth.

The Alexandra Park.—The great scheme for securing the Alexandra Palace and Park for the free use of the people for ever has made much progress of late. Hornsey District Council began the good work by voting an additional £5000, at the same time expressing the hope that this would stimulate other districts to make an offer towards completing the project. On Friday the Wood Green District Council followed Hornsey's example, increasing their former vote of £25,000 by £10,000, making their contribution the handsome one of £35,000. Tottenham District Council was waited upon by an influential deputation, and it is hoped that a vote of £7000 may be the result. In Parliament all is going well. The Standing Orders Committee on Friday reported in favour of the Bill being brought in, and the House at once ordered it to be proceeded with.

The Phoenix Park, Dublin.—*Apropos* of the retirement of Mr. Dick from the post of superintendent of the Phoenix Park, a question in Parliament on the 24th inst. conveyed the information that Mr. Anderson, who, to quote Sir William Waldron's reply to Mr. T. M. Healy, M.P., filled an important post on an Irish estate for the past fourteen years, has been selected for the important office. Without the suspicion of a thought tending to detract from the merits of the gentleman who has received the appointment, it is a matter for regret, which Irish gardeners will share, that Mr. Kearney, the courteous superintendent of St. Stephen's Green Park, has been passed over. St. Stephen's Green Park has long been regarded as the last stepping stone to "The Phoenix," hence it is not only a matter for regret to all who know him, but a matter for surprise to many, that an Irishman so eminently fitted to rule over it has been denied the wider scope it would have afforded to his energy, skill, and experience.—E. K., *Dublin*.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
May.										
Sunday.. 20	N.W.	deg. 54.6	deg. 47.1	deg. 65.1	deg. 34.5	ins. —	deg. 52.1	deg. 51.3	deg. 49.8	deg. 27.1
Monday.. 21	S.S.W.	61.4	52.9	64.2	42.2	0.11	53.8	51.7	49.9	35.1
Tuesday 22	S.S.W.	56.0	53.7	56.4	53.8	0.22	55.3	52.5	50.1	52.2
Wed'sday 23	S.W.	53.0	51.1	60.4	47.5	0.14	53.5	52.5	50.2	41.1
Thursday 24	S.S.W.	53.3	49.8	57.1	47.0	0.23	54.4	52.7	50.5	41.8
Friday.. 25	W.N.W.	53.7	48.7	60.7	44.1	—	54.7	53.1	50.5	37.5
Saturday 26	N.E.	49.6	47.0	62.7	41.5	—	54.9	53.4	50.6	32.9
MEANS ..		54.5	50.0	61.0	44.4	Total 0.70	54.1	52.5	50.2	38.2

A week of dull, cold, windy weather, with rain on four days.

Old-time Manuring.

A DIP into old-fashioned works on gardening and those of a kindred nature reveals the fact that, in theory at least, we are not so greatly advanced in the principles of manuring and the methods of application of fertilisers as one might suppose. We are certainly in a position to command manures in quantities comparatively beyond anything old cultivators could ever have dreamed of, and because of this we are perhaps less careful of materials possessed of manurial properties than they were obliged to be. Nothing, in fact, came amiss to them. When they write of dungs they almost always refer to the unmixed excrement of animals or of fowls, and not infrequently this was permitted to remain for a couple of years to rot before being considered fit to use, a preparation that explains the large proportion of dung put into composts, sometimes amounting to one-half. The employment of dung in a crude form was always condemned, though it would appear that the market gardeners round London transferred the material heaped up in the "lay-stalls" with which the streets of the metropolis were furnished previous to the great fire in 1666 directly to the soil, a practice which was considered by some writers to produce vegetables not altogether fitted for consumption.

Several old writers, following perhaps the teaching of Roman authorities, advise the formation of pits not more than 4 feet in depth, and of dimensions according to the quantity of material possible to be gathered together. Into this receptacle everything that would rot—rags, leather, bones—soot, lees of wine, the washings of dishes, night soil, weeds, leaves, clearing of roads and streets, hair, &c., was mixed with dung and soil, and when it had assumed the properties of a compost it was used in the garden. Pigeon dung dried and sifted was then as now, sown on the surface of the soil, and considered one of the most efficient manures. Lime was largely used where it could be easily procured, and Markham recommends it 300 years ago as one of the best of manures for certain classes of soil. A hundred years later lime-kilns were not at all uncommon for supplying lime for agricultural purposes. Sea sand was also considered of value as a manure, and the various strong growing Fuci, but more particularly *Fucus vesicularis*, cast on shore by the waves, have been employed time out of mind. One of its old names was "hempweed," indicative of the value attributed to it as a manure for Hemp. "Orewood" is another very old designation, and if we are to credit Markham, it was sought for in boats and gathered with hooks from the sea.

Pure salt was long ago highly esteemed as a manure, and is recommended by Lord Bacon for fruit trees. Evelyn, who used it as a weed killer on his walks, found its manurial properties to counterbalance its destructive ones, and came to use it only as a manure. I possess a curious pamphlet written to show the national importance of utilising salt as a manure, and how by its use England might be able to produce Wheat not only sufficient for her own use, but have a surplus to export. A Mr. Liveings in the early years of last century had a place of business at Bow Bridge, Essex, where he sold a "compound manure" at 2s. 6d. per bushel, which was said to be nothing but salt. Switzer, in a little treatise, "A Compendious Method for the Raising of the Italian Broccoli, &c.," commends this manure very highly for horticultural purposes, and a Samuel Trowell, gardener at Poplar, published a work on agriculture and gardening which is largely a puff of the same. The manure was scattered on the ground at about 8 cwt. per acre. Shortly after this time Baron Von Haake's composition was offered as a reliable fertiliser of farm and garden: 16 to 22 lbs. was the quantity of this recommended to be applied to an acre, and it was sold at 1s. per lb., "but to prevent trouble not less than 8 or 10 lbs. will be sold." The formula of William Ellis, a noted farmer of Gaddeston, for an acre of ground was 12 lbs. common salt, 1 lb. saltpetre, 20 bushels wood or coal ashes. Saltpetre (potassium nitrate) had long been in use as a manure. Bacon, for example in "Sylva Sylvarum," recommended Coleworts to be watered with salt water, "and much more with water mixed with nitre." "Hartshorne shaven" was by the same authority commended for "Mushromes."

It is noticeable that Bacon, as above quoted, was aware of the value of manure water, and as a fact it was in common use, if we are to credit old writers, not only in gardens, but also in field culture. Cow dung then, as now, was appreciated as a valuable aid when diluted in water. In some cases it would appear to have been literally only diluted, and was applied in a semi-fluid condition. A not uncommon way of using liquid manure was to fill vessels with it, place them close to the plants to be refreshed, and using a woollen rag as a kind of syphon, with one of its ends in the liquid and the other laid to the root of the plant, it slowly but surely soaked into the ground.—R. P. BROTHERSTON.

The Temple Show.

Although we accorded an exceptional amount of space in our last issue to the report of the Temple Show it was not found possible to include every exhibit. Those without the tents had to be omitted entirely, and one or two within. Of the latter the only one of material importance was the collection of *Nepenthes* contributed by Mr. Geo. Wythes, V.M.H., gardener to the Duke of Northumberland, Syon House, Brentford. These plants were splendidly grown, and should do much to point out to gardeners in general the value of *Nepenthes* for private establishments; as a rule they are somewhat neglected. The principal feature of the outdoor exhibits was found in the long frame of Water Lilies sent by Mr. Jas. Hudson, V.M.H., gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton. These comprised many species and varieties, and Mr. Hudson's reputation as a grower obviates the necessity of our saying anything further. Groups of various forms and sizes were exhibited by several nurserymen, and included amongst others *Begonias* from Messrs. Sutton & Sons; examples of topiary work from Messrs. W. Cutbush and Son; flowering shrubs from Messrs. J. Cheal & Sons; *Acer*s from Messrs. Cripps & Son; miscellaneous flowering trees and shrubs from Messrs. Fisher, Sons & Sibray, Ltd.; and shrubs from Messrs. J. Waterer, Ltd., Bagshot.

Phyllocacti.

So beautiful were the *Phyllocacti* shown by Messrs. J. Veitch and Sons, Ltd., at the Temple Show, that we are referring to them again to bring forward an illustration (fig. 123) that may be regarded as typical of light and dark varieties. Those who have known these plants for many years can see at a glance how marvellous have been the improvements made with them since Mr. John Heal took them in hand on behalf of the great Chelsea firm. We now have, in addition to greater size and substance, superb colours, such as were undreamed of years ago. These facts were amply demonstrated on the occasion of this show, and many were the expressions of admiration that were meted out to these gorgeous flowers. Unfortunately *Phyllocacti* are not grown so much as their striking beauties entitle them to be, but there can be no doubt that they are steadily gaining in popular favour, and it is to be hoped that before long they will be much more frequently seen. Only those who have grown them can appreciate the trials and troubles that must have come to Mr. Heal ere he could insure having such a splendid collection of flowers expanded on the same day.

Tuberous-rooted *Begonias*.

Tuberous-rooted *Begonias* must now be recognised as amongst the most valuable of our greenhouse plants for the greenhouse in the late spring and early summer months and for the embellishment of the flower garden at a later period of the year. Practically the whole of our leading seed firms have contributed to the plant's popularity by using all their skill in the improvement of the varieties in size, form, and colour. Amongst those who have concentrated their forces on the single and double tuberous-rooted *Begonia* must be named Messrs. E. Webb & Sons, Wordsley, Stourbridge, to whom we are indebted for the illustration (fig. 125, page 467) of a typical double variety. Among the recipients of the silver Flora medal at the Temple Show was the Worcestershire house, who arranged a bright collection of *Begonias*, together with some splendid *Calceolarias* and refined *Gloxinias*. Not only was excellence of strain discernible, but also skill in cultural details on the part of the firm's grower.

A Visitor's Comments.

It was hardly possible at this time of the year for a severer test of the popularity, or otherwise, of this great horticultural display to be furnished than the weather of Wednesday and Thursday last supplied, for the rain came down as it had not come down for a couple of months or more previously, doing enormous good elsewhere, but sadly handicapping the show. Yet, and in spite of the rain, what a crowd of people there was in the tents all the afternoons of those two days, so great indeed, especially on the first day, when the heavy rains allowed of no escape to the lawn, that locomotion was almost impossible; and what a well-dressed swell crowd also! Surely nowhere in London could one more fashionable have been furnished, just the sort of people to gladden the hearts of exhibitors, because so many came to order as well as to see!

On Thursday there was almost a repetition of the crowd that was

in evidence on Friday. I do not know, but it was abundantly evident that the Temple Show is at once one of the most popular, as it is one of the most fashionable functions of the London season. That fact speaks volumes for the position of the Royal Horticultural Society, and nobody has done more to create that position than the present council. That is a fact which those Fellows who seem anxious to thwart the council in their proposals, and possibly compel them bodily to resign—a serious calamity—when next important subjects come up for discussion in general meetings, should take to heart. The continuous accession of Fellows to the society's forces is also a remarkable tribute to the society's high position, and there can be no doubt but that such remarkable increase of Fellows has forced on the council the necessity of catering for the interests of these members by providing a noble national horticultural garden, that the prestige of horticulture and of the Royal Horticultural Society may be maintained in the kingdom.

Amidst all our glorification of Imperialism we must not forget that British horticulture has long been in the highest sense imperial, that it is every year becoming more so, and absolutely cosmopolitan. In spite of that fact our national horticultural garden is the poorest of its kind in the world. Our shows, of which the Temple is a grand sample, are splendid. So, too, are our nurseries, our market establishments, our private gardens, and our botanic gardens. But when we turn to our public or Royal Horticultural Garden we have to hide our heads in shame. Because of the great popularity of the R.H.S., the council realise that they owe a debt to the nation, and that debt they think can be most fitly discharged by establishing a great national horticultural garden. This may be a digression, but it could hardly be helped just now.

One undoubted fact in relation to the Temple Show is that for all ordinary purposes it is large enough. Could more room be furnished for visitors that would be good; but that, it is admitted, is impossible. It is therefore of no use to waste paper in asking for more space. It is not so much the extent of the show as the great excellence of what is seen there that is important. We find in many cases, and especially in the hardy plant and flower section, too much repetition; exhibits of that kind become wearisome. All interior exhibits one year should be rigidly barred the next, thus by so doing gradually weeding out poor things; also a severe limit should be put on exhibits that are reproduced year after year. *Begonias* expanding to 200 plants should be limited to fifty, *Gloxinias* the same, and hardy plants under the tents be specially reduced so as to enable novelties to be more largely introduced.

Cannot someone take the cue from Messrs. H. Low & Son's really beautiful *Schizanthuses* and give us a fine representative exhibit of the best annuals in pots? How attractive would they be! It is not so much the grand show of products with which every Temple Show *habitué* is familiar that takes pride of place, but something that is new or old newly provided, like the Gunnersbury Water Lilies, that command special admiration. It would be a great boon could things be rather more grouped in tents than is at present the case. Vegetables and fruits should be all in one, and specially so for the fruits, because then more immediately under observation; Tulips and allied bulbous plants, with hardy cut flowers and rockwork or alpine plants in another; *Begonias*, *Gloxinias*, *Calceolarias*, *Pelargoniums*, and similar florists' flowers in another, and so on, as then visitors seeking for special products would find them with ease, while to the unfortunate reporter this arrangement would be a great gain. Anything like classification is at present more difficult, indeed almost impossible. No doubt it will be claimed that the existing mixed or bizarre arrangement is to many pleasing, but it is at the same time rather bewildering.

What can be done with Orchids can be done with other things no doubt. The placing of the hardy trees and shrubs outside was a great gain and enabled exhibitors to show these beautiful plants to remarkable advantage. That some took great pains to not only arrange these artistically, but also to dress off their bases neatly, redounded greatly to their credit. Those who did not do so should be invited to leave their products at home. Another year the council cannot too strongly urge exhibitors to send not only of their very best, but not to crowd in any case, and to arrange all groups in the most graceful way. How superbly some of the Rose and Carnation groups were so presented; how terribly formal were many others?

No doubt these exhibitors will plead, "What, having regard to the narrowness of our space, could we do?" and that leads me to hold that if the council would concentrate all their show space in the long tents on the centres, and do away with the side tables, giving greater width to the centres, exhibitors of plants and some other products could do themselves far more justice, and the unhappy visitor would not be compelled to look on both sides of the walk at once. I hope next year we may see vegetables far more widely shown. It is not right such important garden elements should be so conspicuously absent, for when in good form they attract immense attention.—SCRUTATOR.



Fig. 123.—TYPICAL PHYLLOCACTI.



Rose Show Fixtures in 1900.

- June 13th (Wednesday).—York.†
 „ 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
 „ 28th (Thursday).—Canterbury, Colchester, and Isle of Wight (Ryde)
 „ 30th (Saturday).—Maidstone and Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
 „ 4th (Wednesday).—Croydon, Ealing, Farnham, Hereford, Reigate, and Tunbridge Wells.
 „ 5th (Thursday).—Bath, Norwich, and Sutton.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham.
 „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
 „ 13th (Friday).—Ulverston.
 „ 14th (Saturday).—Manchester, and New Brighton.
 „ 18th (Wednesday).—Cardiff* and Carlisle.
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne.†
 „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

For Walls.

ROSES are always popular, and especially so when grown as climbers on the walls of villa residences in town and suburban districts. As a rule Roses succeed the best and attain their most vigorous proportions as climbers when grown in the country rather than among the adverse influences accompanying culture near towns. But given a good aspect and good soil, care, and attention in pruning, training and keeping the growths clean will do the rest. All classes of Roses respond readily to generous treatment in soil, space, and aspect. These are important points to consider when planting climbing Roses. If these conditions are fully met the Roses must grow and produce wood, which the cultivator will so train and regulate that it may become well ripened, and flowering will certainly follow.

Good soil does not necessarily imply that special mixtures must be provided, but rather that the existing material be deeply trenched, adding some decomposed cow manure and a proportion of fresh soil, working the whole together. A position often assigned to Roses when planting them as climbers is within easy distance of the roots of large old trees. However good the soil is made the hungry roots of trees or shrubs will draw upon it for moisture, and with that goes a certain amount of good food. The roots of Roses are not able to compete with these, and hence the plants fall into ill health, poor growth being made which is infested with insects. The only thing which conduces to recuperate Roses in this condition is abundant moisture, giving first a copious supply of water, and afterwards liquid manure. The competition of foreign roots, however, is hard to overcome.

When the soil is suitable and kept uniformly moist growth will be free and vigorous, but to have the best results the space for training should be ample. The position ought to be a sheltered one, and not exposed to cutting draughts which are one of the causes of mildew. A sunny aspect favours the production of firm growth, where it is easily ripened. Weak liquid manure is beneficial while growth is being made, and also after the buds form and are swelling. The present time is suitable to make examination of the soil. If moist, liquid manure may be beneficially applied. The majority of Roses are, however, when growing against walls invariably lacking in moisture at the roots. Hence the safest plan is to give clear water first.

Syringing the trees forcibly with water from the garden engine on warm evenings cleanses the foliage, disturbs insects and prevents them establishing a stronghold on the growths. In training the growths dispose them thinly. The results will be better.

Among the best Roses for walls are Aimee Vibert, a Noisette; Cheshunt Hybrid, Gloire de Dijon, Madame Berard, Reine Marie Henriette, Perle des Jardins, Climbing Niphetos, Teas; and Victor Verdier, Jules Margottin, Countess of Oxford, Captain Christy, Bessie Johnson, and Glory of Waltham, Hybrid Perpetuals.—H. T.

Moss Roses.

Moss Roses possess most of the best characteristics of other Roses, and in addition are rendered specially attractive because of the mossy envelope which surrounds the buds. The variety *Blanche Moreau* is exceptionally well mossed. The mossing is caused by the enlarging and lengthening of the sepals, which are also finely divided along their edges and tips, giving that pretty and distinct appearance to the buds which is termed mossy. The sepals in the above variety extend beyond the bud to at least half an inch. The flowers are white and produced in clusters. The old *Blush Moss* also blooms in clusters, the flowers being white tinged with pink.

The *Perpetual White* is a finely mossed variety, producing splendid buds in large clusters. *Mousseline* is white tinted with pink, but as the bloom expands it assumes a pure white character. *Little Gem* is a novelty, a regular, well-shaped flower in miniature, crimson, large and double. Though small it is a vigorous grower. *Marie de Blois* is always thickly mossed, and the flowers, which are large and full, are of a bright rose colour. The *Crested Moss* is characterised by having its buds beautifully fringed. It also is of a bright rose colour. In addition to the white varieties mentioned, *White Bath* should be included, also *Comtesse de Murinais*, white, large and a vigorous grower.

A bright red variety flowering in clusters is *Baronne de Wassenauer*. It is one of the best, and a vigorous grower. *Captain Ingram* is a dark velvety purple not so popular now as formerly. *Eugène Verdier* belongs to the *Perpetual* class, which bloom more towards autumn than many of those named. It is a beautiful crimson large flower, and the growth is vigorous.

Moss Roses have a pleasing fragrance, and on this account a bed of them may be considered a special feature among the best of garden Roses. In a mixed collection of desirable varieties a few Moss Roses interspersed will lend a distinctive character to the group, especially when growth has well begun and the buds are prominent. The compact-growing varieties are best adapted for beds. In the cultivation of the Moss Rose the soil must be kept rich by liberal manuring. They ought always to have a sunny position in order that the wood may be well ripened. The thinning of shoots when crowded should be adopted. This is a means by which the wood is rendered firm and substantial, as vigour is not wasted in the feeding of weak and superfluous growth. Upon the whole close pruning is necessary, the best rule to follow being allowing vigorous shoots a greater length of wood, four or six eyes, and the weaker shoots which are not entirely cut out prune to two eyes.—ROSARIAN.

Tea Roses.

TEA scented Roses possess certain characteristics which are not so common to many other classes of Roses. In the first place the greatest range of colours is to be found among them, embracing various shades of primrose yellow, white, salmon, pink, red, crimson, pale rose, and blush. Then again they are deliciously scented, but this quality can also be claimed by others. In another point Tea Roses can hold their own. Their season of blooming often extends over the whole season. Good healthy plants, whether growing in pots, planted out under glass, or in the open, invariably produce bloom at the points of each new shoot, except this should happen to be strong new shoots pushing out from old wood.

This class of growth, however, is not wanted to bloom during the current year. On planted out specimens its appearance is welcome, as it indicates good root action and bright prospects of an excellent display of bloom the following season. The chief essential in order that it may bloom well is that the wood may become well ripened. Therefore, when this growth is produced, and it ought to be the aim of every cultivator to encourage it, every facility should be given not only to nourish and extend it in the course of the season, but at the same time to build it up firmly and assist the ripening process. These long strong growths break out in various parts of a plant, usually from the main stem or branches, and as it is so desirable to retain them, weakly parts may always be cut out to admit of training them in and providing the requisite space for disposing them thinly.

Vigorous plants, too, are always capable during the season of forming young wood of a branchy or twiggy character. This terminates in a flower bud or a cluster of buds, according to the strength of the growth. The continued production of these shoots prolongs the blooming season, and gives that interesting and useful character to the Tea-scented Roses, which is not equalled by any other class.

A vigorous condition of the plants is best maintained by insuring adequate root moisture and food stored in the soil. Water and liquid manure are therefore necessary at this season, especially where the border in which the plants are growing lacks moisture. If it does it will also be surely lacking in nutrition. Nothing can be added to produce a good effect unless the soil is first thoroughly moistened, when fertilisers should be added judiciously, and the results will repay.—E. D. S.



The World's Great Forests.—Canada heads all other countries in the extent of her forests. She possesses 799,230,720 acres of forest-covered land. Russia is credited with 498,240,000 acres, about 48,000,000 more than the United States. India comes next with 140,000,000 acres. Germany has 34,347,000 acres, France 23,466,450, and the British Islands only 2,695,000. This computation does not include Africa or South America, both of which contain immense forests.

Furcraea Bedinghausi.—A fine specimen of this Mexican plant has recently flowered in the Mexican house at Kew. It consists of a stem 1 foot long, surmounted by some fifty or more glaucous leaves 4 feet long by 2 inches wide. From the centre of the leaves the flower spike rises to a height of 10 feet. The main stem is bright red, bearing numerous bracts of the same colour. Side branches are freely produced which range from 18 inches down to 1 inch in length. From these side branches numerous narrow, tubular, pendulous, green flowers hang, the whole making a very conspicuous object among the surrounding plants. For the sake of its ornamental foliage alone it is worth growing for decorative purposes.—D.

Noteworthy Asparagus.—Mr. J. Udale has sent us from the County Council Experimental Gardens at Droitwich, a small sample bunch of remarkably fine Asparagus. The twenty-five heads weighed 4 lbs. 10 ozs., and some of the larger turned the scale at $\frac{1}{4}$ lb. each. The stems ranged from 9 to 12 inches in length, 4 or 5 inches being green and tender. Mr. Udale's method of culture was described and a fine specimen figured in the *Journal of Horticulture* of June 29th last year. Much of the success is no doubt attributable to the intelligent selection of crowns for planting, as raised from seed sown in April, 1896. Last year the heaviest bunch of twenty-five heads weighed 3 lbs. 8 ozs. This year the weight, as above stated, is 4 lbs. 10 ozs. So far as we remember it is the greatest weight that has been recorded in these columns. Has it ever been exceeded in this country?

A Bamboo Flower Stand.—One of the prettiest flower stands which has appeared of late is made of a piece of bamboo from 4 to 5 feet high, nailed upon a stand of two smaller cross-pieces in the shape of the letter X. A hole of about 3 inches deep is cut above each knot in the upright bamboo, and a natural receptacle for flowers is made in this easy fashion. Bamboo grows in sections, so that as there is a solid piece of wood between each portion of the upright stick, and nothing remains to be done but to pour water into the holes, and to place flowers in each. Lilac and Laburnum look exquisite when placed alternately in the bamboo flower stand, but almost any kind of foliage is effective when used in this way. The flower stand should be placed in the corner of a room or entrance hall, and the stand becomes almost invisible when it is nicely filled with flowers. These useful articles for wall decoration cost, says a daily contemporary, 3s. or 4s. when bought at a fashionable florists, but they can be made at home for a third of the price.

Carnation Mrs. Hemsley.—Whether this be of recent origin or not I am unable to say, but the name certainly is not a familiar one among the better known Carnations. I have only seen it growing in one garden, that belonging to W. H. Laverton, Esq., Westbury, Wilts, of which Mr. G. P. Bound has charge. The great charms of the flower are found in the clove-like scent, the unburst calyx, the beautiful crimson colour, and the large size. Its habit of growth is not so commendable, because it is tall and spreading. Mr. Bound overcomes this failing by giving it a position at the end of the house, where by the aid of a few strained wires the growths can be trained. It appears to be as free to root as it is in growth, which cannot be said of every variety. Those who cannot accommodate any except neat growers should avoid this one; on the other hand, where a small extent of wall can be given up to it in the manner indicated, and careful cultivation afforded, results cannot be other than satisfactory. Large pots are better avoided unless wall space is such as to accommodate its free growth.—W. S.

The Olive Fly.—A fortune awaits the man who finds a means of exterminating the Olive fly, for in Tuscany in a single year, says Mr. Vice-Consul Carmichael of Leghorn, he and his can easily do damage to the tune of five millions sterling. What seems to be wanted, says Mr. Carmichael, is that entomologists of experience should carefully study the habits of the fly with a view to finding out the hitherto undiscovered winter habitat.

Rhododendron Countess of Haddington.—In the Himalayan house at Kew two plants of this hybrid, planted to form one bush, were at the end of April making a fine display. It is said to be a hybrid between *R. Dalhousiae* and *R. formosum*. In the foliage and the shape of the flowers the former is readily traced, the influence of *R. formosum* being slight, but the colour is of a much deeper rose than is ever seen in that plant. The flowers are tubular, $2\frac{1}{2}$ or 3 inches long, by the same across the mouth, fragrant, deep red when in bud, bright rose when first expanded, fading to almost white before they fall. It makes a fairly compact bush, having none of the straggling habit of *R. Dalhousiae*, and is at the same time more floriferous than that plant. A cold house is best for it, as if grown in heat it soon becomes exhausted. It makes a free flowering pot plant, but is much better when planted in a border. Anyone with the room to spare in a cool greenhouse or conservatory could not fail to be pleased with this charming plant if they gave it a fair trial.—W. D.

Chiswick and Gunnersbury.—I was much struck with a most pertinent observation in relation to the Chiswick controversy made the other day by that able gardener, Mr. Jas. Hudson. He said, "Persons have thoughtlessly assumed that because we can grow things pretty well at Gunnersbury, that the same conditions exist at Chiswick; but that is absurd. Chiswick Gardens are not only closely surrounded by buildings, but are being more and more closed in every year, so that every season atmospheric conditions become worse. Here in Gunnersbury we are protected not only by belts of lofty trees, that help to purify the atmosphere, but we are in the midst of about 1000 acres of open land, for behind is the great expanse of Ealing Common, and all round a big area of land belonging to the Rothschild family, which they will not allow to be built upon, so that between the two places no fair comparison can be instituted." What a blessing the Gunnersbury estate is in the hands of people who are not subject to the building fiend.—A. D.

Seed Pockets.—The old time seed pocket, with its tightly sealed ends, does not appear to be worthy the notice of the inventors' attention, at least not generally speaking. One at least of the great seed houses has departed from this custom, and instead use a folding form, which is rendered much more accessible and handy at sowing time. In the case of many seeds, vegetable or flower, the gardener often finds it necessary to divide his stock, so as to make a second or even a third sowing, and to this the ordinary gummed pocket does not lend itself very conveniently, for once the seal is broken it is not always easy to repair. Hard seeds, unless securely enclosed, will often be found loose in the box or seed chest when frequently sorted, and thus become wasted. In the pockets which are hand-folded and ungummed seed-sowing is much simplified. As a protection against loss a small pasted label is used as a seal, bearing the season's date. Old customs die hard. Sealed pockets have been an old time institution, and this being so reform is slow in gaining headway.—S.

Kerrias as Town Plants.—This is always an attractive shrub in the spring months. Passing some small front gardens abutting the highway leading from Trowbridge towards Devizes I could not resist a halt to admire what to me was the prettiest effect I have ever seen from the shrub under notice. The garden, of an oblong shape, had low boundary walls on three sides, the house itself forming the fourth, and these were densely furnished with luxuriant growth and flower, which made a picture not easily described, but envied by many beholders. The double form was that represented, and certainly the example is one that in town gardens may be followed with both advantage and pleasure. Owners of small town gardens often vie with each other in securing the best "show," some in spring, others in summer. The same uniform results may not be obtained in every case, because in some gardens its growth is slow and weakly. Poverty of the soil is often the cause of this, and for which it is not difficult to find a remedy. It is the only instance I have seen where the *Kerria* has been so employed, and with such striking completeness, and a record is given of it so that others desirous of originality in planting may find a useful hint and act upon it in due season.—R. A.

A Day at Altrincham.

It was in 1872 that the groundwork of the now celebrated firm of Clibran & Son was laid, the beginning being in rather a modest way. Its development must be regarded as another proof of the fact that with determination and a business capacity, such as Mr. William Clibran the estimable head of the firm possessed, success must come in time. In addition to the Oldfield Nursery the firm now numbers the Principality Nurseries, N. Wales; 296, High Street, Bangor, N. Wales; the Stamford Nurseries, Bowdon; the nurseries at Hale; the seed trial grounds at Urnston, near Manchester, and the splendid establishment in Market Street, Manchester, wherein one can find seeds, bulbs, and sundries, in fact everything to satisfy the lover of a garden.

The Oldfield Nurseries.

These form the headquarters of the firm, and comprise a large number of glass houses, devoted to the culture of every class of plant. Several houses are devoted to the culture of Tea Roses, and no one could possibly wish for better results. Thousands of grafted plants were just on the move, others newly potted, until all the stages that go to make up plants to the large specimens of both climbers and dwarfs are reached. No trace of mildew could be seen, and the interest in looking over the stock was greatly enhanced by the pleasure of seeing only the best of men employed in their culture.

Ferns of every kind and variety were luxuriating in the greatest profusion, several new *Pteris* raised by the firm being pointed out with deservedly pardonable pride. The *Pelargonium* houses were a blaze of colour. The raising of new sorts is carried on to perfection so much, and the newer seedlings could scarcely be excelled for dwarfness of habit, freedom of flowering, and the size of the trusses. *Cyclamen*, *Primulas*, *Cinerarias*, and *Calceolarias* (fig. 124) are also a great speciality, and the highest conceivable praise one could give would almost fail to describe the hues and beautifully formed flowers so noticeable throughout.

Begonias of every section are most attractive, and the now popular tuberous rooted varieties were seen in immense numbers. At the time of flowering the grand house erected for them is one of the sights of the county. *Chrysanthemums* were past and gone, but the work with the young stock was being pushed on, sturdy, well-rooted plants being the result. An important work in the raising of new seedlings has been going on for years, until now the decorative, and more particularly the single section, stands almost unrivalled.

Many houses are devoted to stove and greenhouse plants, so well grown as to make discrimination almost an impossibility. New *Croton* seedlings seemed particularly promising, but the greatest attraction was the new seedling *Anthurium Fletcherianum*, a remarkable variety with the foliage of *A. Andreanum* but a spathe of an intense crimson hue, some of which measured 8 inches by 4 inches. Soft and hard wooded plants, scented and otherwise, climbers, and everything to suit either botanists or professional gardeners, are kept in stock. *Spiræas*, *Lilies*, *Azaleas*, and every class of bedding plant occupy many houses, whilst the popular *Carnation* finds itself in a similar position, the choicer varieties being represented by sturdy handsome plants in pots.

Many acres are given entirely to the growth of herbaceous and florists' plants and flowers, a well conducted system of division and rotation with thorough attention to position and compost, making the advice of the firm especially valuable. I could dilate at considerable length on the beauties, as seen previously, of the *Pyrethrums*, *Phloxes*, herbaceous *Pæonies*, *Delphiniums*, *Irises*, also of the charming *Alpines* in the rock garden, but the task of selection is too great a tax, so it only remains to be said that this section is replete with the choicest of varieties.

A double form of the old *Arabis alpina* was in evidence and should become highly popular. *Ivies*, *Clematis*, *Jasmines*, and *Passifloras* were observed in thousands. Of the collection of *Hollies* there seems to be no end; all sizes from mere rooted plants to the stateliest specimens take up several acres. *Aucubas*, *Laurels*, *Yews*, *Rhododendrons*, and *American plants* stretched in endless array.

No overcrowding is suffered, the constant lifting and turning of the plants leaving them, as any visitor would see, models of superior culture. Forest trees by the hundred thousand arrest the attention of every one, and it speaks well for the firm that many important orders from H.M. Commissioners of Woods and Forests have been received and executed.

Stamford Nurseries.

This forms an offshoot from Oldfield and must prove most valuable, the air being particularly clear and bracing. Various *Coniferæ* grow in the free manner which is so desirable. Some capital collections of plants were occupying the houses, and included *Latantias*, *Kentias*, *Ficus*, *Aspidistras*, *Pteris major*, *Adiantum cuneatum*, and *Lapagerias*, all in robust health.

Hale Nursery.

This has proved a valuable addition, for not only is the acreage great but the land is rich and good in many parts. Fruit trees have

found a happy home, nearly fifty acres being stocked with trees bearing the stamp of intelligent and careful culture. *Conifers* are again met with in beautiful condition. Many things of interest must perforce be omitted, but sufficient has, I hope, been given to allow readers of the *Journal of Horticulture* to judge for themselves of the interest and instruction that attach themselves to a visit to Altrincham.—A VISITOR.

Hydrangea Culture.

THERE are two ways of growing *Hydrangeas* for early spring flowering, the one by rooting points which have already formed flower buds in autumn, the other by means of cuttings the previous spring, and growing these on during the summer. Generally, I think, the latter is the better method to follow in private gardens, particularly where the plants are wanted in bloom from January onwards. The best forcing kind is the common *H. hortensis*, but the pretty white form, *H. Thos. Hogg*, though less amenable to forcing, is equally valuable for flowering from March, its white flower trusses being in even greater request than the former, and where wreath making forms part of the gardener's duties they are much used for that purpose.

The time to root the cuttings is during April or May, and points either from forced plants or those that flowered at their natural season in autumn are equally suitable. I root the cuttings in an ordinary propagating pit in a sand bed, and once they are well rooted they are potted singly into 3-inch pots, using for the compost a mixture of loam and sand. As soon as established the plants are transferred to a cold frame, and directly they are furnished with three pairs of leaves fully developed the tips are pinched, and half a dozen axillary buds are by this means forced into growth. Either previous to or after this, a shift into 5-inch pots will be required. *Hydrangeas* are by no means fastidious as to soil, and grow well in either a peaty or a loamy medium. The latter, however, is preferable, and if inclined to closeness in texture a little sand and decomposed manure incorporated therewith will facilitate growth.

During the summer and autumn months the plants succeed well in the open, and it ought at this period to be the care of the cultivator to produce large and broad foliage of a dark green colour, because it is on the quality of the foliage that the size of the trusses in the succeeding spring depends. If the leaves do not assume, or having it, lose this dark green tint, a little, but only a little artificial manure may be applied with advantage, but not later than the beginning of August. During September the supply of water must be lessened, in order to induce the young wood to harden and ripen, and by the 10th of October the application of water should cease, the plants meanwhile being preserved in a cool structure.

The plants that are most amenable to early forcing are those that retain their foliage, and which show the young trusses in late autumn. After resting a few weeks these may be started in November or December in a hot stove, applying water liberally with manurial help as required. They come in during January and February. Later stocks must be started as required, the chief points to be observed being a high temperature, with plenty of water. From March less heat will be required. If it is intended to retain the same plants for another year, the shoots when flowering is past must be cut hard back, retaining all the foliage possible, and starting growth slowly. Repot into 7-inch size, and treat very much as for the annual plants.

The one point those who are inexperienced are likely to fail in with these is allowing too many shoots to grow. It will be found that nine well-developed growths are as many as a plant is capable of producing and ripening. All others must consequently be rubbed off while very small. The shoots will, moreover, require to be supported, and at the same time regulated by means of short sticks, one for each.—B.

Allamanda Williamsi.—*Allamandas* have for many years been so closely associated with the name of Henderson that there are others which get slight notice. *A. Williamsi* is a very distinct, though less showy and useful, sort when compared with *A. Hendersoni*. It gives earlier blossoms than any other known to me, and forms a shrubby habit of growth. Shoots from hard cut-back plants produce clusters of small tube-shaped blooms within a foot from the point of issue. Such plants afford an agreeable change for indoor furnishing. They are continuous in bloom, and their sturdy growth and shrubby stature fit them admirably for vase work in the house, and they may be grown in pots of a size convenient for that purpose. One can visit many gardens without finding this *Allamanda*. For spring flowering, however, it certainly is an acquisition.—W.



Fig. 124.—CALCEOLARIAS.

Pine Culture.

PINES yield, as a rule, the finest fruits when they show these ten to twelve months from the time the suckers are potted, but some allowance must be made for the size of them when first started, also for autumn potted suckers, which have to make a part of their growth under adverse influences. Plants that were potted last September will now be showing fruit—if not, means should be taken to effect it. This can be done by subjecting those of that age not exhibiting signs of fruiting—a thick sturdy base, and the leaves commencing to open in the centre of the plant—to comparative rest for a period of a month to six weeks, lowering the heat at the roots to 75°, admitting air fully at 75° to 80°, and letting the temperature fall to 75° before closing the house for the day.

Little fire heat will be necessary, but it must be afforded to prevent the temperature falling below 60° at night, and to secure 65° by day. The plants must not be allowed to become excessively dry at the roots, but when water is needed supply it liberally. The smaller suckers of the plants placed in the fruiting pots this spring should be kept growing until they have filled them with roots, when, if it be necessary, the plants can be subjected to the same course of treatment as advised for the larger plants, and these will afford a successional supply of fruit.

The strongest suckers potted last March have filled the pots with roots and should be transferred when this occurs to their largest pots, as to retain them longer in small pots is detrimental to their after growth. Recently potted plants ought to have a regular bottom heat of 85° to 90°, and be thoroughly watered after potting if the soil be dry, and no more should be given until the soil becomes again in that condition, as it is necessary to exercise more care than usual at this stage, the state of the individual plants being ascertained before its application.

Growing stock, now making rapid progress, should be regularly attended to in every particular. Ventilate early in the day at 75° to 80°, to render the foliage dry before it is powerfully acted upon by the sun. Discontinue shading successional plants, but if very near the glass and the frames large, a light shade will be advisable in the hottest part of the day, also for fruiting plants with the crowns in close proximity to the roof.—PRACTICE.

Notes on Figs.

THE fruit now ripening on the early forced planted-out trees must be kept from damp throughout the whole of the process, affording a free circulation of warm dry air, and a night temperature of 65° to 70°, 75° to 80° by day, and with sun heat 80° to 90°. Figs ripened in a close moist atmosphere are insipid, but those perfected by full exposure to light and in a favourable atmosphere are wholesome and nutritious. If a circulation of air be afforded constantly there will be little danger of "spot," but if it should appear, promptly remove the affected fruit and burn it.

If red spider become troublesome during the ripening, it is a good plan to gather in an airy fruit room all the fruit almost ripe, or sufficiently to ripen perfectly, and then give the trees a forcible syringing, directing the water against the under side of the leaves, so as to dislodge the pests and break their webs. If clear water be used and air admitted rather freely it will not interfere with the ripening of the fruit remaining. By pursuing this treatment red spider may be kept under subjection until the fruit is gathered, when it can be destroyed by forcible syringing and the use of an insecticide. Scale should be removed with a brush and a softsoap solution or some other approved preparation.

Trees that have been cleared of the first crop require generous treatment to swell the second. Syringe twice a day to keep red spider in check, and afford liquid manure when watering is necessary. Trees in pots require liquid nourishment twice a day in hot weather, and in general once; those in borders need supplies once or twice a week, according to the vigour of the trees and the extent of the rooting area; others in restricted areas of limited extent requiring it more frequently than those in large borders. The second crop must be thinned where thickly set before the Figs are the size of pickling Walnuts, and in thinning reserve the largest fruits at the base of the shoots.

Young trees for next season's early forcing in pots must not be neglected. Afford all the light possible and keeping them as near the glass as is consistent with their growth. Syringe well and supply liquid manure, so as to secure a sturdy growth, and when that is complete they may be placed outdoors in a sunny corner to induce rest. They must not, however, be dried off, but have proper syringing and due supplies of water, and if the wood be soft the trees should be kept under glass until it is thoroughly ripened.—GROWER.

Hardy Border Flowers.

Asarums.

LOVERS of plants which are more curious than showy may direct their attention to the Asarums, although those who like bright flowers alone had better eschew their cultivation. Our native Asarum europæum, the Asarabacca, is rather pleasing because of its glossy roundish kidney-shaped leaves, and its dull brown flowers are singular in their appearance and colouring to those unacquainted with the few other species. They must be looked for, or they will remain undiscovered. An interesting species comes from Canada in the shape of *A. canadense*, which grows about the same height as *A. europæum*—i.e., about 1 foot. Its campanulate flowers are also brown, but they are even less apparent than those of the former, as they are often nearly buried in the soil. A rare species, which comes from California and is named *A. caudatum*, has never come under my notice. I understand that the lobes of the calyx are lengthened and attenuated. They are said to be brownish red in colour. Although *A. europæum* occurs in Britain it is not confined to our isles, but is found in various parts of Europe. In like manner, *A. canadense* occurs in portions of the United States. These Asarums do quite well in partial shade, and are increased by division. They do not seem to be particular as to soil.

Asclepiases.

The Asclepias or Swallow-wort deserves a little more attention from growers of border flowers, although it must be admitted that many find the few species in cultivation rather difficult to grow in the ordinary border. Of the species obtainable perhaps the best are *A. incarnata*, *A. syriaca* or *Cornuti*, and *A. tuberosa*. The last named is the finest of all. The flowers of all are in umbels, and when open produce a fine effect. *A. incarnata* is a good bee plant and is very fragrant, besides being rather pretty because of its red or purplish flowers. It grows about 2 feet high, and is a native of Canada. It will grow in a peaty or rich, light soil, and is increased by division or seeds. *A. syriaca* or *Cornuti* has pale purple flowers which have a pleasant scent like that of honey. It grows to 2 or 3 feet high, and may be cultivated similarly to *A. incarnata*.

A. tuberosa is well deserving of several attempts to naturalise it, or at least to persuade it to grow in the garden. It has very handsome umbels of bright orange flowers, and grows from 1 to 2 feet in height. It is a very showy plant, and is usually much admired when seen. It likes a deep and fairly moist soil with a little shade. There are some other species which ought to be hardy in our climate. At the time of the compilation of the Kew "Hand List of Herbaceous Plants" there were in cultivation in the Royal Gardens there the following:—*A. amplexicaulis*, *A. incarnata*, *A. obtusifolia*, *A. speciosa*, and *A. tuberosa*. Large tubers of *A. tuberosa* do not transplant well, and I am inclined to think that young plants from seeds are more easily established.

Asperulas.

Asperulas are best known in this country by the Woodruff, as *A. odorata* is commonly called. There are, however, several species which commend themselves to those interested in alpine gardens. These are beyond the scope of the present notes, and I am only acquainted with one species which can be considered suitable for the flower border. This is *A. hexaphylla*, which I have grown for several years, and can recommend as a useful plant for cutting purposes. It does not appear to be generally grown, but its white flowers may be used for some purposes where the familiar *Gypsophila paniculata* may not be desired. It grows from 18 to 36 inches in height, and has very slender stems with narrow leaves and a number of small white flowers. It is easily grown in light soil, and increases at the root with a fair degree of rapidity. It may be propagated by division or from seeds. From the latter, which can be purchased, the writer grew his plants. There appear to be two Asperulas bearing this name. One of these is synonymous with *A. cretacea*.

Asphodelines.

The Asphodelines are closely related to the Asphodels, the distinction between the two depending upon the plants under notice having erect leafy stems. The most familiar to us is *A. lutea*, commonly met with as *Asphodelus luteus*, a plant once better known than now. It was introduced from Sicily as far back as 1596, and yet remains one of the best of the genus, though some more recently introduced are very imposing and effective. It grows some 3 or 4 feet high, and has a dense straight raceme of yellow flowers and many dark green leaves lined with a lighter shade. A handsome recently introduced species is *A. imperialis*, which has reddish white flowers, and reaches a height of about 8 feet. *A. liburnica* grows to about 2 feet in height, and has yellow flowers. *A. taurica*, also called *Asphodelus tauricus*, has white flowers striped with green, and reaches about the same height as *A. liburnicus*. Other species are *A. Balansæ*, *A. capillaris*, *A. istmocarpa*, and *A. microparpus*. There is also a double flowered variety of *A. lutea*, which is a desirable plant. They thrive in any ordinary soil, and may be increased by division in spring, or by means of seed sown at that season. There is a growing taste for conspicuous plants for the purpose of adding effect to the border, and such plants as the Asphodelines will be found very desirable among others.—S. ARNOTT.

Jottings About Melon Culture.

(Concluded from page 264.)

FROM the beginning of June onward throughout the summer Melons grown in suitable houses make wonderful progress, and unless tying and stopping are regularly performed leaves and shoots soon get crowded. If at any time it is found that too many laterals have been retained, it is better to remove a few of them than to allow crowding to continue, as one firm thick leaf produced by full exposure to light is better than two weak and improperly developed ones. In order to keep the roots active a few sub-laterals should be continually trained between the main leaves or allowed to hang over the top of the trellis, or along the front of the house. This is, therefore, an additional reason why overcrowding should be avoided in the early stages of growth.

As soon as the young roots have formed a network in the soil added at the final earthing, regular feeding should be practised till the fruits begin to colour. This may be given both in the form of liquid manure and chemical fertilisers. Blood obtained from a slaughter-house diluted with six times its bulk of water, forms a splendid liquid manure for fruits of all kinds, as well as plants in pots. In country districts, however, gardeners cannot often obtain it, but they can usually procure the drainings of stables and cow sheds, which are at all times valuable for feeding plants and crops. I like to give some kind of liquid manure at every watering while the fruits are making their first swelling, for to a great extent the size of the fruit is determined during that stage.

Chemical fertilisers given in the form of a top-dressing are also of immense benefit, as they bring the roots to the surface and keep them wonderfully active, but this activity can only be maintained by regular dressings with such fertilisers till the fruit begins to change colour. If their use be discontinued earlier the plants receive a check, and the fruits sometimes do not finish well.

Some cultivators are greatly troubled with red spider, and to check it syringe their plants with a solution of softsoap, with which a little flowers of sulphur has been mixed. When this is done the edges of the leaves are often browned, as they are very tender. With a liberal feeding at the roots, due attention to watering, and syringing the plants freely during bright weather, spider ought not to give much trouble. I like to close the houses about 2 P.M. during the hottest weather, at the same time syringing every particle of foliage, and damping the floors liberally, the process to be repeated an hour after during exceptionally bright weather. Under such conditions both plants and fruits seem to advance by leaps and bounds, and revel in the "bottled" heat and moisture. Even during hot weather it is necessary to warm the hot-water pipes slightly at night, or canker and rotting at the collar of the plants will sometimes take place. A quart of clarified soot water mixed in a 3-gallon can of water is an

excellent concoction to syringe the plants with occasionally in order to promote a deep green colour in the leaves, and keep insects in check.

Occasionally one hears of black fly being troublesome in Melon houses, but it is usually caused through not keeping a sufficiently moist atmosphere during the growing stage, and fumigating is the best means of destroying the pests when they have obtained a firm footing. If only a few shoots or leaves are attacked syringing with or dipping them in tobacco water effectually prevents further trouble in that respect.

Melon plants if in good health should seldom require shading, but it is not wise to adhere to hard-and-fast rules in such matters. After long periods of dull weather if the sun suddenly shine out brightly the plants often show signs of distress, and unless shaded for a few hours may be seriously crippled, especially if carrying heavy crops. The critical time is generally when the fruits are fully grown and before they begin to colour, for they seem then to feel the strain the most. In the earlier stages of growth plants will sometimes show signs of distress through mistakes in watering, as it requires a considerable amount of judgment to know exactly when to water. With

the soil packed with roots, and plenty of healthy growth, during bright weather frequent and liberal applications are necessary, but in dry dull weather it is an easy matter to water a little too soon. The time when the cultivator must be on the alert is when a dull morning is succeeded by bright bursts of sunshine. If the promise of a dull day throughout had been fulfilled no water would have been needed, but the changed condition of the elements renders water absolutely necessary. Hundreds of plants are annually brought into a state of semi-collapse through delaying the application of water an hour too long during such trying weather.

I am no advocate for the common practice of withholding water almost entirely when the fruit is colouring, through fear of causing



FIG. 125.—SEEDLING TUBEROUS-ROOTED DOUBLE BEGONIA. (See page 460.)

them to crack, as I have practised almost every conceivable plan, and have come to the conclusion that although water is not required so often then as when rapid growth is being made, the soil should never be allowed to get dry enough to cause the plants to flag. If it does, the fruit will inevitably crack when the sap again expands the contracted tissues. It is the overdryness at the root before water is given which is the real cause of cracking in such instances, though in others too much atmospheric moisture without a free circulation of air will have a similar effect.

Some varieties, such as Hero of Lockinge and The Countess, require to hang for several days after being highly coloured before they are ripe enough to cut, and when a few fruits are slightly in advance of others on the same plant I like to cut the stems half through, just below the fruit, to lessen the supply of sap in that direction. After cutting all Melons which are not over-ripe they should be placed on a dry shelf in a warm airy house for a day before being sent to table. A Melon more than any fruit is at its best in point of flavour for a very short time, and the cultivator should learn by experience just when that stage is reached.—H. D.

Royal National Tulip Society.

May 23rd.

THE annual Southern Exhibition was held in connection with the Temple Show of the Royal Horticultural Society on May 23rd, 24th, and 25th, and never since the Southern Exhibition has been revived have better Tulips been seen. It may not be generally known, that up to seven or eight years ago florists' Tulips were practically unknown and unknown in the South of England. This state of things was not to the taste of a few northern enthusiasts, and they commenced showing in London. At first almost all the flowers were from the north, but gradually southern exhibitors have come forward, and now the position of affairs is very encouraging, and it looks as if the south will soon rival the north, both in the quantity and quality of its exhibits. The Tulip Society does not want a Tulip boom, and is content to go slowly, if surely, believing that gradual developments will bring more lasting results.

Owing to the lateness of the spring the date chosen well suited the southern growers, in fact all the flowers were grown in the south with the exception of Mr. Bentley's, which came from Llandudno. Flamed flowers were exceptionally well shown by Messrs. Hall and Chater, while on the whole Mr. Bentley had the best feathered blooms, which just enabled him to carry off the silver cup. There were no novelties of note staged, but the quality of the older varieties, such as Saml. Barlow, Sulphur, Sir Jos. Paxton, George Edward, Talisman, Annie McGregor, Bessie, Modesty, Mrs. Wood, and Trip to Stockport were very good. The following is a list of awards.

Class A. *Twelve dissimilar Tulips, two feathered and two flamed in each class.*—First, Mr. J. W. Bentley, Manchester, with Bertha and Bessie, feathered byblœmens; Trip to Stockport and Duchess of Sutherland, flamed byblœmens; Modesty and Pet, feathered roses; Annie McGregor and Mabel, flamed roses; General Grant and Masterpiece, feathered bizarres; Saml. Barlow and Lord Stanley, flamed bizarres. Second, Mr. A. Chater, Cambridge, with Adonis and Trip to Stockport, feathered byblœmens; Duchess of Sutherland and Talisman, flamed byblœmens; Annie McGregor and Aglaia, flamed roses; Annie McGregor and Sarah Headly, feathered roses; Saml. Barlow and Sulphur, flamed bizarres; Sir Joseph Paxton and Geo. Hayward, feathered bizarres. Third, Mr. A. D. Hall, Wye, Kent, with Talisman and Black Prince, feathered byblœmens; Chancellor and King of the Universe, flamed byblœmens; Miss Edwards and Comte de Vergennes, feathered roses; Annie McGregor and Aglaia, flamed roses; Dr. Hardy and Attraction, feathered bizarres; Saml. Barlow and Sir Joseph Paxton, flamed bizarres. Fourth, Mr. G. Edom, Walton, Epsom, with John Henry and Ashmole's 126, feathered byblœmens; Talisman and Duchess of Sutherland, flamed byblœmens; Mabel and Sarah Headly, feathered roses; Mabel and Rose Hill, flamed roses; Magnum Bonum and Sir J. Paxton, feathered bizarres; Dr. Hardy and Sir J. Paxton, flamed bizarres.

Class B. *Six dissimilar Tulips, one feathered and one flamed of each class.*—First, Mr. A. D. Hall, with Wm. Parkinson feathered, and George Edward flamed byblœmens; Miss Edwards feathered, and A. McGregor flamed roses; Attraction feathered, and Saml. Barlow flamed bizarres. Second, Mr. A. Chater, with John Linton feathered, and Talisman flamed byblœmens; Miss Edwards feathered, and A. McGregor flamed roses; Sir J. Paxton feathered and flamed bizarres. Third, Mr. J. W. Bentley, with Trip to Stockport feathered and flamed byblœmens; Mabel feathered, and Annie McGregor flamed roses; Saml. Barlow flamed, and Masterpiece feathered bizarres. Fourth, Mr. C. W. Needham, Hale, Cheshire, with Talisman feathered and flamed byblœmens; Annie McGregor feathered and flamed roses; Wm. Anibal feathered, and Sir Joseph Paxton flamed bizarres.

Class C. *Six dissimilar Tulips, two in each class, either feathered or flamed.*—First, Miss Scott, St. Albans, with Talisman and Maid of Orleans, byblœmens; Glory of Stapleford and A. McGregor, roses; Dr. Hutcheon and Masterpiece, bizarres.

Class D. *Three feathered Tulips, one of each class.*—First, Mr. J. W. Bentley, with Bessie, Mrs. Collier, and Masterpiece; second, Mr. A. Chater, with Adonis, Sarah Headly, and Masterpiece; third, Mr. A. D. Hall, with Prose pine, Comte de Vergennes, and Standard.

Class E. *Three flamed Tulips, one of each class.*—First, Mr. A. D. Hall, with George Edward, Annie McGregor, and Sir J. Paxton; second, Mr. A. Chater, with Duchess of Sutherland, Mabel, and Dr. Hardy; third, Mr. C. W. Needham, with Adonis, A. McGregor, and Samuel Barlow; fourth, Mr. J. W. Bentley, with Trip to Stockport, A. McGregor, and Sir J. Paxton; fifth, Mr. G. Edom, with Talisman, A. McGregor, and Sir J. Paxton.

Class F. *Six dissimilar breeder Tulips, two of each class.*—First, Mr. A. D. Hall, with Adonis, Maid of Orleans, byblœmens; Rose Hill and Mrs. Barlow, roses; Goldfinder and Sir J. Paxton, bizarres. Second, Mr. J. W. Bentley, with Ashmole's 126 and Glory of Stakehill, byblœmens; Rose Hill and A. McGregor, roses; Goldfinder and Saml. Barlow, bizarres. Third, Mr. A. Chater, with Adonis and Bridesmaid, byblœmens; Rose Hill and A. McGregor, roses; Goldfinder and Sir J. Paxton, bizarres. Fourth, Mr. G. Edom, with Adonis and Janette, byblœmens; Mabel and Lloyd's 209, roses; Excelsior and Goldfinder, bizarres.

Class G. *Three dissimilar breeder Tulips, one of each class.*—First, Mr. A. D. Hall, with Talisman, A. McGregor, and Hepworth's 100/64. Second, Mr. J. W. Bentley, with Adonis, Rose Hill, and Goldfinder. Third, Mr. A. Chater, with Maid of the Mill, Modesty, and Sir J. Paxton. Fourth, Mr. C. W. Needham, with Adonis, A. McGregor, and Goldfinder. Fifth, Mr. G. Edom, with Adonis, Rose Hill, and Richard Yates.

Class H. *Pair of Tulips, one feathered and one flamed of any class.*—Samuel Barlow Memorial prizes. First, Mr. J. W. Bentley, with Mrs. Wood, feathered; and Saml. Barlow, flamed. Second, Mr. A. Chater, with Sarah Headly, feathered; and Saml. Barlow, flamed. Third, Mr. A. D. Hall, with Guido, feathered; and Saml. Barlow, flamed. Fourth, Mr. G. Edom, with A. McGregor, feathered; and Sir J. Paxton, flamed.

Class I. *The best feathered flower in the show.*—Mr. Chater, with Trip to Stockport. The best flamed flower in the show.—Mr. Hall, with George Edward. The best breeder.—Mr. Hall, with Adonis.

Class L. *Collection of Florist Tulips, arranged for effect.*—First, Mr. Edom, with a group which included Masterpiece, Sir J. Paxton, Dr. Hardy, Mabel, A. McGregor, Talisman, Adonis, and other standard varieties.

Class H.A. *Pair of Tulips, one feathered and one flamed. For maiden growers only.*—First, Mr. W. C. Bull, Ramsgate, with Masterpiece, feathered, and Sir J. Paxton, flamed.—J. W. B.



Fruit Forcing.

Vines.—*Early Houses.*—Where Grapes are hanging afford sufficient water to the inside borders to maintain the soil in a moist condition. No injury will result to the Grapes provided the atmosphere is not stagnant, but air must be given more or less constantly. When the Vines are cleared of the ripe fruit the foliage should be cleansed of dust and red spider, employing tepid water, and, if necessary, an insecticide, as keeping the foliage clean and healthy to the last is important for aiding the formation of the buds for another season. The leaves being fresh and clean, hold the laterals in check by pinching, though should there be anything defective with the principal foliage a little freedom may be allowed to the laterals.

Houses with the Fruit Swelling.—It is not wise to dispense with fire heat, although the requisite temperature may be secured from sun heat on all but dull days and cold nights. Much, however, may be done in saving fuel by closing early in the afternoon on fine days, accompanied by plenty of atmospheric moisture. Be careful to avoid a constantly saturated atmosphere by a little ventilation at night and increasing it early in the morning. Nevertheless, a moist atmosphere is essential to the swelling of the berries, and it should be secured without stagnation by damping the floors and borders two or three times a day—in the morning, at closing time, and before nightfall. Do not allow the laterals to grow so as to crowd the principal leaves, but keep them well in hand. Where, however, there is plenty of space, they may be allowed to extend, yet not so as to necessitate their removal to a great extent later on. The temperature should be maintained at 65° at night, or a few degrees less on cold nights, 70° to 75° by day, and 80° to 85° from sun heat, allowing an advance to 90° after closing, or early in the afternoon.

House with the Grapes Ripening.—Although a constant and liberal supply of warm, rather dry air, is desirable for securing good finish and high quality in the fruit, a genial condition of the atmosphere is necessary for the benefit of the foliage. Still the air moisture must not be excessive or stagnant, or it will prejudice the ripening. Do not neglect to supply water at the roots, and if nourishment is given it should be of a sweet, not rank, nature, or the Grapes may be tainted. This often happens with late applications of soot and other organic matter. If a light mulching of short, sweet litter, be applied, it will tend to a more equable moisture at the roots. A good heat is essential to insure the highest quality. Indeed there is no comparison between Grapes that are properly finished in a rather warm and well-ventilated atmosphere and those ripened in a low temperature and moist atmosphere.

Grapes Scalding.—Muscats and other varieties completing the stoning should be carefully watched in bright hot weather, and in case of indications of scalding, air must be admitted more freely or until the colouring commences and is somewhat advanced. At that period all danger will be passed as regards the black varieties, but Muscat of Alexandria will scald when well advanced in colour, and it is necessary in houses glazed with large panes of glass to employ a slight

shading, as that of herring netting, over the roof-lights in very bright periods. While it is essential that these Grapes be otherwise well exposed to light, with Hamburg and black Grapes generally it is different. They colour best beneath a good spread of foliage, and such shade is one of the best means of preventing scalding, provided the supply of air be bountiful by day, and a little ventilation left on constantly at the upper part of the house with a genial warmth in the hot-water pipes. A temperature of 65° to 70° by artificial means suffices, or a little less for Hamburgs.

Late Grapes.—Where the Vines are in flower a constant supply of dry warm air will promote good setting of fruit, the temperature being kept at 70° to 75° by artificial heat, and rising to 80° or 90° with sun. Thin the berries freely immediately they are set. This in the case of the shy setters must be confined to the removal of the smallest and imperfect berries in the first instance, deferring the general thinning until the properly fertilised ones can be determined by their free swelling. There must not be any deficiency of moisture at the roots, therefore afford liquid manure copiously after the Grapes are thinned and swelling, or a top-dressing of some approved fertiliser, distributing it evenly over the surface and then working in moderately. If the weather be dry and the soil light, outside borders will need watering. Top-dress with fertilisers or liquid manure if the Vines are not very strong or are carrying a full crop.

Young Vines.—Those in pots for next year's fruiting should have the leading shoot or cane stopped at 8 to 9 feet, and the laterals or sub-laterals pinched at one leaf as produced. Supernumeraries in recently planted houses should also have the canes stopped at the length named, the laterals and sub-laterals being closely pinched. This will concentrate the energies of the Vines in the principal leaves and buds, and is necessary for those intended to fruit fully next season. The permanent Vines, however, may be allowed to make all the growth there is room for, but it is a mistake to encourage growth by over-stimulation and an excessively humid atmosphere. Growth should be accelerated by closing the house early on fine afternoons, admitting a little air before night, and increasing it early in the morning of fine days. When young Vines become established they will require abundance of water at the roots. Avoid, however, making the soil sodden by needless applications, and sprinkle surfaces two or three times a day so as to maintain a genial condition of the atmosphere.

The Kitchen Garden.

Tomatoes.—Sunny walls and fences are good positions for growing Tomatoes, and the sooner the plants are put out the heavier will be the crops and the greater the certainty of ripening. No very special preparation of site is needed, Tomatoes succeeding admirably in soil that will grow good crops of Potatoes. Strong young plants are best for planting. These may be disposed 15 inches apart, wherever spaces can be found between fruit trees, or against walls and fences wholly devoted to them. The soil about them should be packed somewhat firmly, and the balls of old soil and roots be kept constantly moist till such times as the roots have spread out into the new soil. Where it is not possible or convenient to plant out, large pots, or, better still, boxes, may perhaps be arranged, filling these with good soil and planting.

Tomatoes may also be successfully grown during most summers quite in the open, or without the shelter and warmth afforded by walls and fences. Sunny, sheltered borders, would naturally answer best, but they are found highly remunerative when grown by the acre and quite in the open fields. For these positions, extra early varieties such as Early Ruby, Earliest of All, Laxton's Open Air, are the most desirable. They may be put out 15 inches apart in rows 3 feet asunder, placing a 4-foot bamboo to each and attaching these to a wire strained 3 feet above the ground, or they may be planted at less regular intervals, always providing good room is afforded, and have a stout stake placed to each. If well hardened prior to planting there will be little or no need to protect from late frost.

Vegetable Marrows.—The time has also arrived for planting these on a large or small scale. Those put out earlier in May will have required much attention in the shape of protection from cold winds and frosts. Great heaps of manure are wasted on Vegetable Marrows, which not infrequently succeed better on ridges under which there is not more than 12 inches of manure, or even less. Holes 3 feet or so in diameter, or long beds 4 feet wide, may be prepared by having the top spit of soil thrown out, returning it over 18 inches or less of manure with heat and moisture left in it. When the ridges or mounds are warmed through plant either single plants or groups of three, those on the ridges being 3 feet apart. It is a good plan to alternate the ordinary trailing varieties with the bush varieties, the former eventually covering the whole of the ground, as the bush varieties are early but not continuous bearers.

Ridge Cucumbers.—Sites for these may be prepared exactly as advised in the case of Vegetable Marrows, the other cultural details being much the same. It is well to raise the plants somewhat high in the centre, as the stems are then less liable to suffer from excess of moisture, which evidently leads to canker or decay.

THE BEE-KEEPER.

Obtaining a Surplus of Comb Honey.

At this season bee-keepers are making arrangements for obtaining a surplus from their bees, and no time must be lost in deciding on the method to be adopted. In the early stages the treatment of the various stocks should be the same, namely, to have them all as strong as possible by the time the honey flow comes. Afterwards their treatment will differ. If comb honey is desired in the ordinary 1 lb. sections, all that is necessary is to place a crate of twenty-one sections on a strong colony well crowded with bees. This, however, should never be attempted unless the weather is warm, and honey is coming in freely.

For supering purposes we prefer a hive with at least ten standard frames in the brood chamber. In ordinary seasons, if the bees have received timely attention, they will be well filled with brood in various stages of development. Only a few rows of cells along the top of the frames will be filled with honey. This is always kept in reserve by the bees for feeding their young, the pollen being placed in convenient cells in various parts of the combs. Directly the bees begin to lengthen their cells near the top of the combs, which may be detected at once owing to the white appearance of the new comb, it shows that honey is coming in freely. If, however, from any cause the stock is not so strong as desired, and honey is coming in rapidly, the bees may be made to carry their honey into supers by restricting the brood nest. This is done by removing the outside frames and closing up the division board, so that the bees are compelled to remain on a few combs. The brood chamber thus becomes crowded, and the bees are forced into the super. If this is done it is not advisable to place a full crate of twenty-one sections on the hive at once, but to increase the number as required.

An early harvest of comb honey may often be obtained in this manner without any detriment to the bees. Should the weather continue fine and honey is coming in freely, frames of fully drawn out combs or foundation may be again used to enlarge the brood nest, otherwise the bees would probably swarm.

Spreading Brood.

Is it an advantage to interfere with the brood nest by spreading the brood at this season? Some bee-keepers are very successful in carrying out this operation. Others, again, fail. It should only be attempted by those who thoroughly understand the bees' requirements. We do not recommend the system, as only on special occasions do we practise it. Briefly, it is done in this manner. About every fourth day the stock is examined, and the comb next to the brood nest, in which there is probably a quantity of sealed stores, which should be uncapped. It is then placed in its former position. The honey will be at once removed and stored in various parts of the hive. This will cause the queen to commence laying freely in the cells nearest to the brood nest. The next time the combs are examined the other side of the comb is uncapped. The frame is reversed, the side containing the newly laid eggs being on the opposite side of the frame from the brood nest. This is repeated as often as necessary, and if carefully done the stock will increase at a rapid rate.

We prefer this plan to the one usually adopted of placing an empty comb in the middle of the brood nest, as the brood is much more liable to become chilled. This is the great danger, as should cold weather set in and the spreading of the brood has been overdone, it will be impossible for the bees to cover it all. It is thus destroyed, and in due course is turned out of the hive. This fact alone shows how careful bee-keepers should be in spreading brood.—AN ENGLISH BEE-KEEPER.

Gardeners' Charitable and Provident Institutions

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

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• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Pear Tree Shoots with Crimson Spots (D. W. B.).—A worse infection of attack by the Pear gall mite, *Phytoptus pyri*, has not come to our notice. The creature has taken a fancy in your case to the fruit, and the young growths are also affected in the wood. Remove as much of the affected points of the shoots, the worst infested leaves, and all the fruit attacked, as it will grow deformed, but do not defoliate the tree too much, or the remedy may prove worse than the disease. This greatly weakens the tree, causing the leaves to turn brown or black and fall prematurely. Syringe the tree with a solution of bisulphide of calcium. This is made by boiling a pound each of flowers of sulphur and quicklime in a gallon of water for fifteen minutes, constantly stirring whilst boiling. Then allow to settle, and pour the clear liquid off for use. If placed in a stone bottle and tightly corked in a dark place it will keep indefinitely. Dilute with 100 parts water for use, or say a gill (quarter pint) to three gallons of water, and apply with a syringe, taking care as far as possible to wet the under side of the leaves. Repeat the syringing if necessary, but usually one application is sufficient. In the winter, whilst the buds are quite dormant, the trees should be sprayed or syringed with a solution of paraffin in seven parts of water. This treatment has been found to successfully keep the pest in check, acting well on the mites while in the scales of the buds.

Vaporisation with Sulphur for Destroying Red Spider in Vineries (R. A. C.).—1, Place the flowers of sulphur in the fumigator cup and pour on water so as to form the sulphur gradually into a paste, ultimately using enough water to cover the sulphur. Then light the lamp. When the water has been heated to 170° it commences to give off fumes. Arrange the lamp so that it does not cause excessive boiling of the mixture, and on no account allow the cup to become dry or the sulphur may burn, and give off fumes fatal to both animal and vegetable life. It is a process that requires very great care, but when the vaporiser is kept constantly at work giving off mild fumes of sulphur vapour, it has been carried out, notably by Mr. Norman at Hatfield House with good results. 2, Syringing of the Vines early in the afternoon and then shutting the house is a very old practice and good for checking the red spider. In this process the moisture generated operates well against the pest, as it delights in dry conditions at the roots of the Vines. No injury is done to the Vines if the water used be clear and soft, but in most cases the water contains so much solid matter in solution that a deposit is left on the Grapes, and this tells seriously against them for table or marketing when ripe. One of the largest growers of Grapes uses water from a hose pipe, and finds that by commencing operations when a few specks of red spider first make their appearance it is the best of all preventives and remedies. That it does not materially injure the Grapes, the fact that the bunches are disposed of in the markets at top prices testifies. Care, however, is taken not to distribute the water at random, and early steps should be taken to keep the Vines clean, so as not to have recourse to drastic wholesale syringing at a time when the Grapes are far advanced towards ripening. A house with a southern aspect closed at 1.30 p.m., and everything—"house, walls, Vines, stage, and pipes"—thoroughly wetted, is likely to generate too much heat, running up perhaps to over 100°, and the moisture may become condensed on the foliage and Grapes, causing the leaves to become scorched and the Grapes rusted. What we mean by

early closing and syringing is closing at the time in the afternoon when the sun will not raise the temperature to over 90°, or at most 95°, and then well damping the house, floor or paths, borders and walls, but not the Vines. The moisture thus generated is very inimical to the Acari, and on the other hand beneficial to the Vines. In such cases it is advisable to admit a little air before nightfall, and to cease syringing the Vines when the Grapes commence to change colour.

Twigs on Victoria Plum Tree Denuded of Buds (Loughhall).—The wood and bark of the branches and spurs are quite healthy, but on an extent of growth 18 inches in length there is not a single bud left, neither blossom nor wood; all have been removed probably by birds. On another branch about a foot long there appears only one growth from a wood bud—the terminal one of a spur. There is also one flowered growth, the incipient fruit of which has not set in consequence of being damaged by frost. We can hardly understand how the tree could have blossomed, for the sockets of the buds are quite brown, pointing to their removal some time ago. If they have been removed by bullfinches or sparrows, as we suspect, the only preventive is to trap the bullfinches or shoot them. Bullfinches and sparrows may usually be kept at bay by syringing the trees with hot limewash made thus. Quicklime is formed into a limewash consistency with water, or, what is better than water, a solution of sulphate of copper, 1 oz. to 1½ gallon of water, first slaking the lime with water into a thick paste, and then diluting it with the copper sulphate solution. It should be applied whilst the buds are quite dormant and the trees are dry, as it will adhere to them, whereas if the lime be not quite freshly burned the limewash made from such will be washed off by the first rain. As the trees are making indifferent growth we should give the ground from the stems outwards to a little further than the branches extend a top-dressing of the following mixture:—Superphosphate of lime, 12 parts or lbs.; powdered saltpetre, 7 part or lbs.; nitrate of soda, crushed fine, 9 parts or lbs.; and gypsum, ground, 9 parts or lbs.; mixed and applied at the rate of a quarter pound to the square yard. The mixture may be applied in the spring and autumn, and is one of the best applications we have used to enable the trees to overcome canker and induce a healthy growth, especially in Apple and Pear trees.

Apple Growths Mildewed (Idem).—The young shoots are affected by the Hawthorn and Apple tree powdery mildew, *Oidium farinosum*, which may be subdued by syringing or preferably spraying with sulphide of potassium or "liver of sulphur" 1 oz. to six gallons of water, repeating occasionally. When the foliage is very tender a strength of 1 oz. to nine gallons of water is safer, as the Apple, though the hardiest of British fruit trees, is more susceptible of injury from its downy foliage than many other trees. We also advise the ground to be top-dressed as advised for the Plum trees, applying the mixture without delay, so as to give some benefit in the current growth and make provision for next year's growth and crop.

Grapes with "Marks" (Cross).—The depressed marks or patches on the berries are what is known as "scalding." Some varieties are more subject to it than others, Lady Downe's being the worst, then Muscat of Alexandria, sometimes Black Hamburgh, Gros Maroc, and Alicante. It is generally caused by a confined atmosphere and the sun acting powerfully on the house before air has been admitted to induce evaporation from the berries. The berries are not usually affected at so early a stage as in the specimens, though it sometimes occurs. It is that form of scalding known as "spot," not ripening or ripe "spot," for it appears when the Grapes are young and swelling fast. It commences with a small, irregular, and whitish mark on the side of the berry, as if it had been bruised in some way. Afterwards the pulp beneath dries up and a sort of contraction occurs, the affected berry soon assuming a one-sided, irregular form. This "spot" is believed by some cultivators to be caused by sudden chills, such as having the house very close and moist, and then suddenly, on some bright morning, admitting the external cold air too freely and too abundantly. The "spot," however, is caused by the "spot" fungus, *Glaeosporium læticolor*, in not a few instances, of which the best preventive is free ventilation, especially in the early part of the day. The only remedy now is to cut out the affected berries and burn them, though the "fruits" in your case are not yet developed.

Tropæolum speciosum (W. R. Raillem).—There is often much difficulty in establishing this fine climber in places where both atmospheric and soil moisture are deficient. It thrives best in districts such as the West Highlands, where there is a heavy rainfall, combined with frequent mists. These cannot be secured elsewhere, and in drier districts it is necessary to plant the Tropæolum in a cool position, especially one where the roots and the early growths are shielded from the sun. A dry subsoil is very unfavourable to it, and we know of gardens in favourable districts where it fails because of this, though it thrives in others near where there is moisture below. In some places the great difficulty occurs in the first and second years after planting. It often makes little growth for a year or two, and then runs ahead with great rapidity. In planting we advise you to do so in a cool, shaded position facing north and east, and to water the plants frequently until the tubers have fairly taken hold of the soil and the plants have grown several feet high. Some fail from keeping the soil too open, but it ought to be made firm before and after planting the Tropæolum. It must also have something to which it can attach itself at first, such as a few twiggy branches. It does not dislike a gravelly soil provide.

it is not too dry below. Slugs are sometimes to blame for the failure, as they frequently crop the young growths as they appear. These pests like to "sample" new plants to a garden, and to this cause many have reason to attribute the loss of this exquisite plant.

Seedling Amaryllis (S. B.).—The flowers did not reach us in a proper condition for examination. We do not think, however, that the variety is distinct from others, and certainly in the state in which it arrived is rather inferior, particularly in the narrowness of the segments. We would advise your growing it thoroughly well next season, as Amaryllis, like other flowers, frequently improve immensely, and then submitting flowers to one of the leading specialists in this plant. If you wish a favourable opinion, however, you will have to adopt a better system of packing.

Compost for Peach Tree (R. M.).—An excavation 3 feet deep, parallel with the wall, and not more than half its height, is ample for a Peach border. If the soil is wet, make a drain, 3-inch tile, near the outside edge, with a proper fall and outlet, and 6 inches lower than the bottom of the border, which should incline to the drain. Place in 9 inches of rubble about the size of half bricks, then 3 inches the size of road metal, preferably old brick and mortar rubbish from a building, excluding pieces of wood and the finer particles by sifting. The surface of the drainage should be as fine as a gravel path, and covered with thin sods to prevent it being choked with soil. Substantial loam, compact but porous, is the best rooting medium, compactness being essential for the retention of the food elements, the sub-division of the roots, and porosity for the percolation of water. As the soil may not always be had according with the above conditions a good compost may be formed thus:—Take four parts of red or yellow loam, stiff and deficient in gravel or grit, one part burnt clay, one part old mortar rubbish, crushed and all pieces of wood picked out, and one part road scrapings well ameliorated. Chop the turfy loam in pieces about 2 inches square, and mix the ingredients well, placing in the border compactly when in good working order. About half a peck of wood ashes may be added to each barrowload of soil with advantage, and also a quart of crushed bones.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (T. A. J.).—1, sporeling form of *Adiantum cuneatum*; 2, *Narcissus poeticus recurvus*; 3, *Cytisus elegans*; 4, *Habrothamnus elegans*; 5, *Anemone nemorosa flore-pleno*; 6, *Muscari botryoides*. (E. C.).—1, *Prunus rosea flore-pleno*; 2, the *Alexandria Laurel*; 3, *Viburnum Gloire de Versailles*; 4, *Cryptomeria japonica*. (Subscriber).—*Asparagus Sprengeri*; *Ornithogalum umbellatum*. (H. S., Winchester).—1, *Caragana frutescens*; 2, *Choisya ternata*. (E. J. B.).—A *Viburnum*, but the specific name cannot be given unless a flower is sent. (F. J. B.).—1, *Weigela (Dier-villa) rosea*; 2, *Ulex pilosa nana*; 3, *Choisya ternata*; 4, *Halesia tetraptera* (the Snowdrop Tree).

Covent Garden Market.—May 30th.

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums	2 0	3 0	Narcissus, double white,		
Asparagus, Fern, bunch...	2 0	2 6	doz. bunches ...	3 0	4 0
Bouvardia, bunch	0 6	0 9	" Pheasant-eye, doz.		
Carnations, 12 blooms ...	1 6	2 0	bunches	1 0	0 0
Cattleyas, per doz.	0 0	12 0	Odontoglossums	5 0	7 6
Eucharis, doz.	3 0	4 0	Pelargoniums, doz. bnchs	8 0	12 0
Gardenias, doz.	1 6	2 6	Roses (indoor), doz....	2 6	3 6
Geranium, scarlet, doz.			" Red, doz....	2 0	4 0
bnchs.	6 0	9 0	" Safrano, doz	2 0	3 0
Lilia, doz bunches	3 0	4 0	" Tea, white, doz. ...	2 0	3 0
Lilium Harrisii, 12 blooms	3 0	4 0	" Yellow, doz. (Perles)	3 0	4 0
" longiflorum, 12 blooms	3 0	4 0	" Maréchal Niel, doz.	6 0	12 0
Lilac, white, bundle ...	3 0	4 0	" English (indoor):—		
Lily of the Valley, 12 bun.	6 0	18 0	" La France, doz. ...	3 0	6 0
Maidenhair Fern, dozen			" Mermets, doz.	3 0	8 0
bunches	8 0	10 0	Smilax, bunch	4 0	6 0
Marguerites, doz. bnchs.	3 0	4 0	Tulips, Parrot, doz. bnchs.	4 0	8 0
" Yellow doz. bnchs.	3 0	4 0	" yellow, bunch	1 0	1 6
Mignonette, doz. bunches	3 0	5 0	" bronze, bunch	1 0	1 6

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz.	12 0	24 0	Ficus elastica, each ...	1 6	7 6
Arbor Vitæ, var., doz. ...	6 0	36 0	Foliage plants, var., each	1 0	5 0
Arums, per doz.	6 0	8 0	Genistas, per doz.	8 0	15 0
Aspidistra, doz.	18 0	36 0	Geraniums, scarlet, doz....	6 0	10 0
Aspidistra, specimen ...	15 0	20 0	" pink, doz.	8 0	10 0
Azaleas, various, each ...	2 6	5 0	Hydrangeas, white, each	2 6	5 0
Boronia, doz.	20 0	24 0	" pink, doz.	12 0	15 0
Oretons, doz.	18 0	30 0	Lily of Valley, per pot ...	1 0	2 0
Dracæna, var., doz....	12 0	30 0	Lycopodiums, doz.	3 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	8 0	10 0
Erica various, doz.	8 0	18 0	Mignonette, doz.	8 0	12 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	" specimens	21 0	63 0
" small, 100	4 0	8 0	Spiræas, per doz.	8 0	12 0

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, English, sieve ...	5 0	10 0	Grapes, black	2 0	4 0
" Californian, case ...	8 0	14 0	Lemons, case	4 0	15 0
" Nova Scotian, barrel	15 0	22 0	Melons, house, each ...	1 0	2 0
" Tasmanian	8 0	18 0	Oranges, per case	5 0	15 0
Apricots, per box	1 6	0 0	" Californian, seedless	16 0	24 0
Cherries, per box	0 9	1 3	Pears, Californian, case...	6 0	12 0
" black, house	6 0	8 0	Pines, St. Michael's, each	1 0	6 0
Cobnuts per 100 lb....	80 0	90 0	Strawberries, lb.	3 0	6 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	1 0	2 0	Mushrooms, lb....	0 8	0 10
Asparagus, green, bundle	0 9	3 0	Mustard and Cress, punnet	0 2	0 0
" giant, bundle	4 0	6 0	Onions, bag, about 1 cwt.	4 6	5 6
Beans, Broad, per flat ...	3 0	4 0	" Egyptian, cwt. ...	8 0	0 0
" Jersey, per lb.	1 0	0 0	Parsley, doz. bunches ...	2 0	4 0
Beet, Red, doz....	0 6	0 0	Peas, Jersey, lb.	0 9	1 0
Cabbages, per tally	5 0	7 6	" French, per pad ...	2 6	3 6
Carrots, doz.	3 0	4 0	Potatoes, cwt.	3 6	6 0
" new, bunch... ..	0 3	0 4	" new Jersey, lb. ...	0 2	0 5
Cauliflowers, doz.	3 0	5 0	" Tenerife, cwt....	18 0	28 0
Celery, bundle	1 0	1 9	Radishes, long, doz. ...	0 6	0 0
Cucumbers, doz.	2 0	4 0	" round, doz.	1 0	0 0
Endive, doz.	1 6	2 0	Shallots, lb.	0 3	0 0
Herbs, bunch	0 2	0 0	Spinach, bushel	2 0	3 0
Leeks, bunch	0 3	0 0	Tomatoes, foreign, doz. lb.	4 6	5 6
Lettuce, doz.	0 10	1 2	" English, doz. lb. ...	8 0	9 0
" Cos, doz.	2 0	3 0	Turnips, bunch... ..	3 0	4 6
Mint, green, doz. bunches	2 0	0 0	" new	0 0	0 10



Legislative Proposals.

MR. LONG'S Agricultural Holdings Bill having been brought before Parliament, it has been quickly followed by another proposed by Mr. Channing. Both have met with a great deal of criticism, and it is very unlikely that either will become law; in fact Mr. Channing's Bill has no chance whatever, and even Mr. Long's Government measure very little, for who knows how soon we may find Parliament dissolved?

Whereas some of Mr. Channing's proposals are so unpracticable as to be quite out of all probability of realisation at present, the chief critics of Mr. Long's Bill found their objections to it on account of its not going far enough. The Bill does seem at first sight to deal with several burning questions of tenant right in rather a tinkering manner, leaving them very nearly in their previous condition, but as long as the landlord is to have any authority or power as to the management of his property, his rights must be considered as well as the whim or convenience of the tenant.

Two of the burning questions are whether the consent of the landlord should be necessary before a tenant put up buildings or lay land down to grass. Mr. Long says yes to both.

With regard to laying land down to grass we think the tenant might be given a free hand, and no doubt few landlords would be found who would object doing so. The only case we can imagine

where a landlord would be justified in refusing permission would be in the case of an inexperienced tenant attempting to make permanent pasture of poor sand land which the landlord might prefer to plant with Larch. To meet a case like this appeal might be made to an official expert, who would decide whether the land were suitable for laying down or not. On his decision would rest the question whether the wish of the landlord or tenant be most reasonable.

Laying down grass is expensive, and it is some years before the tenant gets much benefit from it; therefore in case of a sudden termination of the tenancy—from death, for instance—the fair improved value of the new pasture should be due to him or his representatives.

The right to build without the landlord's consent is, however, a very different matter. To be able to do this with the power to exact compensation on quitting is nothing more or less than the right to spend another man's money without consulting him in any way on the matter. No doubt the argument may be used that a tenant laying down money for his own benefit would spend it wisely and for the general benefit of his holding.

That sounds very plausible, but farm tenants do not sit as long on their holdings as they once did, and as you can hardly find two farmers in the same parish who are quite agreed upon the most desirable way to construct farm buildings, every new tenant requiring alterations of some kind, if he can persuade his landlord to grant them, we might be treated to the spectacle of a landlord paying for the building done by an outgoing tenant whilst his incoming tenant requires large alterations in the same. Whilst if the landlord refuses, what is there to prevent the newcomer after he has got settled down from building himself another set in another position, or under threat of doing so compelling the owner to spend a considerable sum in alterations to premises which he had no hand in arranging, but has had to pay for?

We may be putting an extreme case, but we have seen a good deal of tenant farmers and changes of tenancy, and we are convinced that under the influence of such a law many similar ones would occur. There were great flaws in the Agricultural Holdings Act, but in trying to amend grievances it would be a great pity to institute others. We do not write as landlord partisans, having suffered personally as outgoing tenants. We had to pay full dilapidation for repairs to considerable buildings put up by our own family, and for the building of which nothing was allowed, whilst the landlord spent our money in alterations to suit the new tenant.

Another point in the Bill which has caused much discussion is the clause allowing compensation for corn consumed by horses other than those regularly worked upon the farm. We see that Yorkshire farmers as represented by the Yorkshire Union of Agricultural Clubs are in favour of extending this compensation to the food consumed by the working horses as well, and we agree with them that if one is allowed the other should be, for there cannot be much difference in the residuary value. We ourselves should prefer the manure from working horses to that from mares and foals and young growing horses consuming the same quantity of corn.

We have never set a high value on horse dung, and seeing how beneficial cattle grazing, and how detrimental horse grazing is to grass land (in some grazing districts horses are forbidden on the feeding pastures), we cannot see that agriculture as a whole is going to benefit by making outgoing allowances for horse corn. The only effect that we can see will be to make a present to sitting tenants, who will get paid when they quit for that which they got for nothing when they entered. It is only another addition to the capital sunk in tenant right, of which there is already far too much. There will certainly be nothing gained, for the alteration in the law will make no difference to the quantity of corn the working horses will get, and any large substitution of horses for cattle in English pastures is not likely to benefit either the land or the tenant.

One great improvement might be made in the Act by extending the period of unexhausted fertility of manures applied to pastures and

meadows. Of course in case of meadows manures purely nitrogenous would be excepted, and in pastures very slight extension would be advisable, but compensation for all slow-action manures should be spread over a much longer period than at present.

Another desirable addition to the Bill would be a provision to compensate the tenant for the young seeds which having been once grazed have not been ploughed up for corn, but left in a profitable condition for another year's grazing. As a system of grazing seeds two years prevails largely in England at the present time, and is likely to increase under the difficult conditions as to labour, such a very sensible addition should be sure of acceptance by Parliament if it is found possible to get a Bill through at all.

Another question mentioned at the second reading by Major Rasch is that of freedom of cultivation and sale. Such freedom is much more common nowadays than it used to be, and there is a great deal of land which could not be let on any other terms; but it would be easy to make it universal without risk to the owners of the soil by allowing dilapidation for undue drawing off of crops without proportionate return in purchased manure.

Work on the Home Farm.

At last we have a change to more summer-like weather. We have had a nice warm rain, and there really seems to be a prospect of the temperature remaining at a higher figure than we have enjoyed since last summer. We fancy there will be a good deal of spraying for Charlock this summer. The few local experiments which were made last season, though not entirely successful, were sufficiently encouraging to warrant repetition on a more extended scale.

Messrs. Strawson, who are the chief authorities on Charlock spraying, claim on the authority of a large number of farmers who have tried it that it has been a great success, that Charlock can be killed if 50 gallons 2 per cent. solution of pure sulphate of copper per acre be used. The operation should be performed when the plants are from 2 inches to 6 inches in height, and to complete the job it should be repeated in a fortnight. Early sown Turnips are coming up, and already there are complaints of fly.

Warm showery weather should prevent much damage, but where the attack is serious the following is a good device to destroy the insects:—Make a light frame long enough to stretch across five or six rows and 18 inches wide, light enough for two men to carry easily. Over this stretch old sacking or carpet, cover the upper surface of this material with gas tar, and keep the surface moist and sticky. If this frame be carried close over the rows of young Turnips the flies will rise when disturbed, a large proportion will fall on the tar and remain there, while those flying forward will be again disturbed, and few will escape.

Fortunately there is no very urgent necessity for hoeing either Wheat or spring corn, as both are clean, and in neither are there many Thistles. Still the fields must be looked over, and any stray weeds grubbed up. Even this is not easy of accomplishment, so scarce is labour of all kinds. Two or three years ago there would be in each parish gangs of men who, having been employed in draining and assisting in thrashing operations, were ready to undertake hoeing or similar urgent farm work by the piece, would make long days, thus earning good wages by overtime, and filled a most useful place in the economy of the parish. Such little coteries have almost disappeared, farmers have largely had to help each other with the thrashing, and now if corn must be hoed the horse hoe is the only kind possible.

A good horse hoe well handled is very efficient, but the grain requires careful drilling with a view to its use for really good work to be done without damage. They work well on Wheat that has been sown with a press drill after a good ploughman.

Bogus Butter Abroad.—The U.S. Consul at Bordeaux sends to the State Department the cheering intelligence (though it is really more important to the would-be consumers of butter in France than to anybody else) that the laws against selling oleomargarine for butter are now coming to be very well enforced. The French statutes are sensible and moderate, being intended merely to prevent fraud on the purchaser or eater—nothing else. They prohibit not only the offering for sale as butter of products not wholly composed of milk or cream, but make every butter-maker and butter-seller liable for having such product in his possession, however the same may be labelled. If enforced this will drive such compounds out of all groceries and markets where butter is offered. As a consequence, no dealer in oleomargarine or any similar article, whether wholesaler or retailer, can have genuine butter on the same or adjoining premises. If they deal in this product, which is not forbidden to be sold as such, it must be as a separate and independent trade. The terms of the law are wide enough to embrace hotel and restaurant keepers. Strictly construed it would, says a contemporary, effectually prevent not only dealers, but users, from having both butter and oleomargarine on their premises at the same time.

RIVERS' FRUIT TREES, Roses, Vines, FIGS, ORANGES, AND Orchard-House Trees.

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Journal of Horticulture.

THURSDAY, JUNE 7, 1900.

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Apple Election.



I having occurred to me that an election of Apples would prove generally useful I addressed a circular letter to all the best authorities I could think of amongst nurserymen, market growers, and gardeners in various parts of the country, choosing as far as possible those who had practical knowledge gained by selling either fruit or trees.

The letter will speak for itself; it was as follows:—"Seeing how very desirable a thing it would be in the interests of everyone connected with fruit growing—nurserymen, fruit growers, and also the public—that the number of varieties of the various fruits should be reduced and a lead given to those of proved merit, I am getting together the views of the leading experts upon the subject of Apples."

The selections were to be made with a view to combining as far as possible quality with free bearing. All had to be essentially market Apples, but not the so-called "market Apples" whose only recommendation is appearance, for it is not with these that we can hope to hold our own against Apples from other countries.

Best six cooking Apples to be grown as standards.

Best three dessert Apples to be grown as standards.

Best twelve cooking Apples to be grown as bushes.

Best six dessert Apples to be grown as bushes.

To these letters I received thirty-two replies giving the information sought, three saying that the task was beyond the powers of the writers, and one (which ought to be sent to a museum of antiquities) in which the writer says that he has been many years collecting the information I asked for and that it was too valuable to give away, but he should be pleased to see the result of my inquiries in the Press. The italics are mine.

I take this opportunity of thanking those who gave themselves the trouble to reply to my letter,

and I trust that the information they have given may be of use to my other correspondents, as I am sure it will be to many of the reading public.

It will, I think, be wise to point out that although the replies given come from all parts of the country, the bulk of them are written from the fruit-growing districts of the south and west, so that some Apples most suitable for the north and midlands do not stand quite so forward in the list as they might have done had the votes been more evenly divided. Setting this aside, it will readily be seen that certain varieties take the lead in *all* localities, as, for instance, Lane's Prince Albert and Cox's Orange Pippin, which for bush culture have each secured thirty-one votes out of thirty-two. A remarkable feature of this election is the way such comparatively new varieties as Newton Wonder and Bramley's Seedling have come to the front; it took fifty years for Cox's Orange Pippin to gain the favour of cultivators, but things move more quickly to-day; still, I am inclined to think that such Apples as Alfriston and Beauty of Kent, which are of finest quality, and also productive, deserve more notice than they have received.

I am, of course, not responsible for my correspondents' selections, and whilst some class Blenheim Pippin as a table fruit, others call it a culinary Apple, and some of the most practical name it under both headings as a desirable variety. It is only fair to say that Worcester Pearmain would have had more votes but for my remark about quality—indeed, the votes given are recorded *despite* the quality clause. Lord Suffield and Lord Grosvenor detract the one from the other to some extent, as most growers prefer the former where it will grow, and where it will not they take the latter.

Six Standards for Cooking.

Dumelow's Seedling (Wellington)	21
Warner's King	18
Bramley's Seedling	18
Newton Wonder	17
Ecklinville	13
Lord Grosvenor	10
Lane's Prince Albert	10
Blenheim Pippin	7
Duchess of Oldenburg	6
Keswick Codlin	6
Lord Derby	6
Annie Elizabeth	6
New Northern Greening	5

Alfriston, Golden Noble, Beauty of Kent, New Hawthornden, Grenadier, and Bismarck, 4 each; others 1 and 2 each.

Three Standards for Dessert.

King of Pippins	25
Cox's Orange Pippin	21
Worcester Pearmain	14
Blenheim Pippin	11
Devonshire Quarrenden	8
Irish Peach	3

Sturmer Pippin, Allington Pippin, Duchess of Oldenburg, Ribston Pippin, and Adam's Pearmain, 2 each; others 1 each.

Twelve Bushes for Cooking.

Lane's Prince Albert	31
Stirling Castle	23
Ecklinville	22
Newton Wonder	20
Bramley's Seedling	18
Potts' Seedling	18
Lord Grosvenor	18
Warner's King	16
Grenadier	15
New Hawthornden	13
Duchess of Oldenburg	13
Lord Derby	11
Alfriston	11
Golden Noble	11
Lord Suffield	9
Frogmore Prolific	9
Dumelow's Seedling (Wellington)	9
Golden Spire	8
Peasgood's Nonesuch	7
Beauty of Kent	6

Stone's, New Northern Greening, Annie Elizabeth, Cox's Pomona, and Gascoyne's Scarlet Seedling, 5 each. Thirty others, smaller number of votes, chiefly 1 and 2 each.

Six Bushes for Table.

Cox's Orange Pippin	31
King of Pippins	23
Worcester Pearmain	20
Lady Sudeley	13
Ribston Pippin	10
Devonshire Quarrenden	9
Allington Pippin (new)	8
Claygate Pearmain	6
Irish Peach	6
Sturmer Pippin	6
Beauty of Bath	6
Mr. Gladstone	5
American Mother	4
Duchess of Oldenburg	4

Gascoyne's Scarlet Seedling, Scarlet Nonpareil, Adam's Pearmain, Blenheim Pippin, and Court Pendu Plat, three each. Twenty-eight others received one or two votes.

I regret that a goodly number of those to whom I addressed questions (twenty-four out of sixty) did not see the importance of the matter, or had not time to reply; but I think we may take it for granted that the tables given above represent the best of the knowledge obtainable in this country, and if planters take the first twelve, six, or three in each list as a guide they will not be far wrong.

As fruit salesmen have a considerable interest in the question under consideration, I addressed some twenty of the leading men in this line in all parts of the country, who handle Apples, asking them to give the twelve best cooking Apples, and six best dessert (British grown), that sold most readily and gave most satisfaction to buyers and best returns to growers. Only six replied, the others, probably dreading to disclose any trade secret, were discreetly silent.

Cooking Apples.

Warner's King	6
Lord Suffield	5
Lord Derby	4
Dumelow's Seedling	4
Stone's	4
Lord Grosvenor	3
Bramley's Seedling	3
Ecklinville	3
Blenheim Pippin	3
Lane's Prince Albert	3
Beauty of Kent	2
Keswick Codlin	2

Table Apples.

Worcester Pearmain	6
Cox's Orange Pippin	5
Blenheim Pippin	4
King of Pippins	3
Ribston Pippin	3
Devonshire Quarrenden	3
Yellow Ingestre	2
Duchess' Favourite	2

I trust that the importance of the subject will excuse the length of this communication.—A. H. PEARSON, *Lowdham, Notts.*

Gooseberries.—In spite of the lateness of the season there were plenty of good sized Gooseberries in the shops and markets for the making of Whitsun tarts, and the mad ones of the earth may participate in the suitable refreshment of Gooseberry Fool. How cheap the berries are, too, telling most forcibly of their abundance! Lancashire Lad, Keepsake, Industry, and Crown Bob are the prime producers of early green berries, and amongst the most profitable of varieties; I may, perhaps, say the most profitable of fruits, for with good bushes and a good crop of berries, few fruits return more profit per acre than do Gooseberries. No one can say that the consumer is wise in so partaking of the fruit, because in its half developed stage it contains little that is nutritious; but to the consumer that matter gives little concern, and certainly it gives none to the grower.—D.



Odontoglossum Rolfeæ optimum.

IN our last issue we illustrated and described a superb *Odontoglossum* from one of the leading continental growers. We now bring to the notice of our readers *Odontoglossum Rolfeæ optimum* (fig. 126), which was exhibited at the Temple Show by Mons Ch. Vuylsteke, Loochristy, Ghent, Belgium; it was recommended for a first-class certificate by the Orchid Committee of the Royal Horticultural Society. It is a singularly handsome flower, and was the centre of a considerable amount of attention from Orchid enthusiasts, amongst whom there was a diversity of opinion as to whether *crispum* or *Pescatorei* had been associated with *Harryanum* in its production. The sepals and petals are white, save for a flush of rose at the tips, and numerous spots and blotches of chocolate colour. The front portion of the splendid lip is pure white.

Cymbidium l'Ansoni.

THE number of new *Cymbidiums* that are shown at the various exhibitions of the Royal Horticultural Society is not great, and very few indeed are known by the special recognition of the Orchid Committee. On the occasion of the recent Temple Show, however, Messrs. H. Low and Co., Bush Hill Park Nurseries, received an award of merit for *Cymbidium l'Ansoni*. This plant, of which an excellent representation is given in fig. 127, is said to be a natural hybrid, of which even the supposed parentage was not stated. The flower is large, and has pale green sepals and petals; each organ has reddish brown bars, which become more pronounced towards the base. The lip is milk white, with a brown tinge on the front portion.

Miltonia vexillaria.

Notwithstanding all that has been written respecting this lovely Orchid, there are still many growers who fail to grow it well for any length of time. It is certainly one of the finest species in cultivation, and there

forms particularly, such as the unique *M. v. Memoria J. D. Owen* for instance, but take a group of it with good forms, and it is sure to command a lot of attention.

Referring again to the Temple, there was more than one expert in Orchid culture who was surprised at the amount of flower produced by the plants from the establishment over which M. Linden used to preside. Looking at the plants one would not say certainly that they were out of health, but in fact many plants have been shown from English nurseries with far better growth. And again, it was to be noticed that many of the plants were by no means well potted; the base of the pseudo-bulbs was too far from the surface of the compost, and in consequence the roots were exposed.

Yet the flowers were lovely, and this proves plainly enough that it is not always the largest, most plethoric pseudo-bulbs that produce

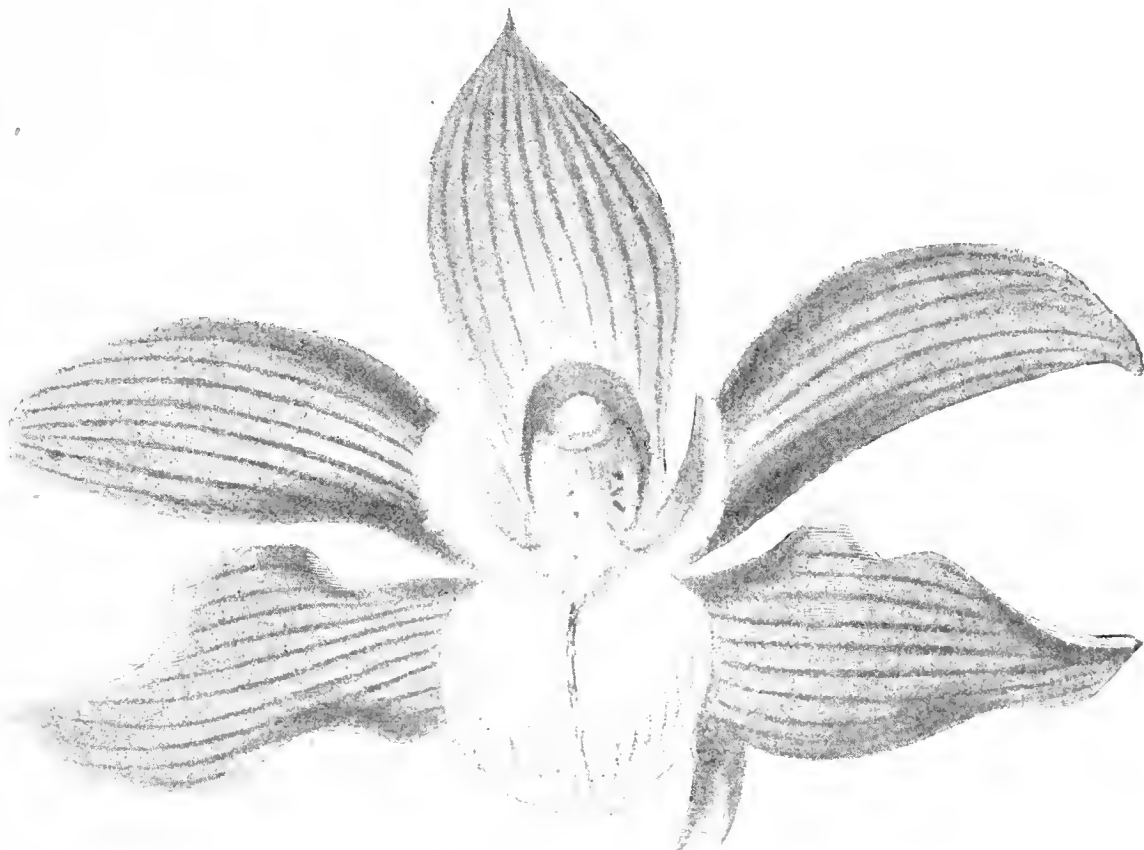


FIG. 127.—CYMBIDIUM l'ANSONI.

the best flowers. It is well known, too, that overfed ill-ripened growth is much more likely to be attacked by thrips, and eventually spotted, than that which is reasonably strong and moderately hard. One of the most successful growers of *Miltonia vexillaria* in this country told me that when rare and unique forms come into his hands for propagation he never felt the least compunction about cutting them up even to single bulbs, but after doing so he always placed them in pans for suspending near the glass, and used moss only for compost.

Bad peat has more to answer for in regard to killing Orchids of rather fastidious taste than any other material, and certainly, unless it can be obtained of good lasting quality, it is better to leave it entirely out of the compost for weakly growers, depending upon the moisture-holding and sweetening properties of the springy sphagnum, adding only sufficient charcoal or crocks to keep the bulk open and prevent it settling down closely. The advantage of shallow rather than deep pots will be evident to anyone acquainted with the habit of the roots of *M. vexillaria*.

Regarding the time for repotting, this does not differ from the majority of Orchids. I have on many occasions pointed out in the *Journal of Horticulture* that the time least likely to inconvenience the plants is just at the time when new roots are issuing from the newly formed growth, and this is true of the species under notice. The young roots have the advantage of entering the fresh sweet compost, and thus assist in this case in swelling up the new growths and producing the flower spikes.

The temperature necessary for *M. vexillaria* has long been a vexed question among growers, some holding that a low and very moist one is necessary owing to the plants being so likely to be attacked by thrips in a house kept warmer. There is a certain amount of truth in this, but with the advent of XL All and other safe and effective insecticides, it is the cultivator's own fault if he lets his plants be badly infested. A happy medium here hits the mark best; a house kept lower than the *Cattleya* house with ample atmospheric moisture and light.

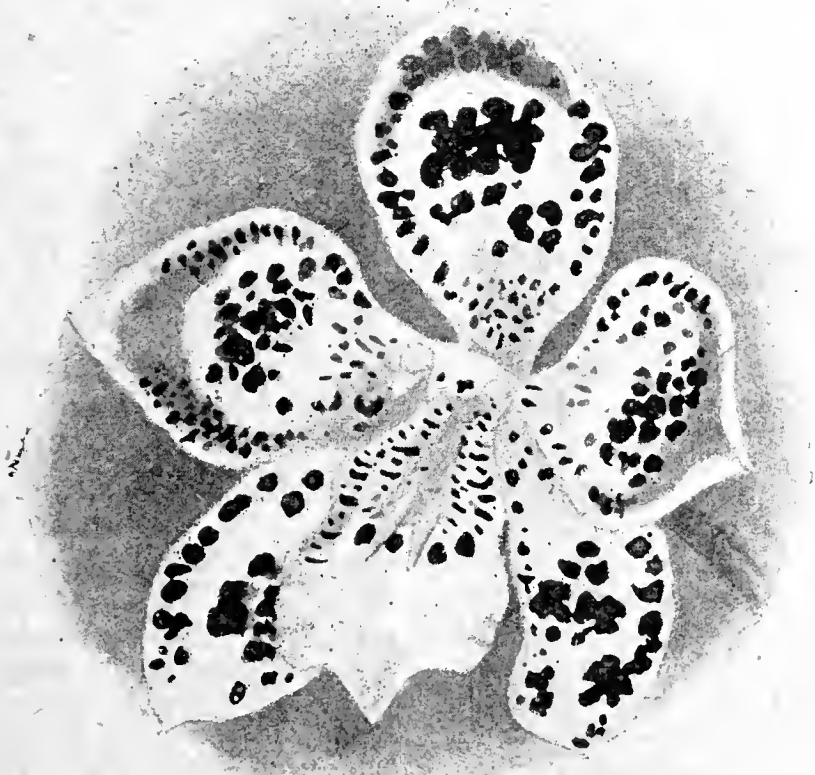


FIG. 126.—ODONTOGLOSSUM ROLFEE OPTIMUM.

was no other plant so much admired among the Orchids at the recent show at the Temple. And I do not mean the very rarest

Lælia purpurata Backhousiana.

Forms of this lovely *Lælia* with flushed sepals and petals are not rare by any means, but in this fine form it is very deep in colour and regularly distributed. Unlike *L. p. Ashworthiana* that was shown a few years ago, it has not at all the appearance of a monstrosity. This latter has the appearance of carrying three lips. In contour, and in size, too, *L. p. Backhousiana* leaves nothing to be desired, and it is evidently free-flowering. It would make a fine companion plant to *L. p. Littleiana*, figured in last week's *Journal of Horticulture*.

Kergerstenia graminea.

Although a small and not a particularly showy Orchid, this is a striking and brightly tinted species well worthy a place in collections of a representative character. The foliage is narrow and grass-like, the blossoms occurring from the base on single-flowered peduncles, but as these are freely produced the effect of a well flowered plant is very good. Like other dwarf species it must not be overpotted, and as thrips are fond of the young foliage see that the atmosphere is always kept moist. Being a native of New Grenada, it does not need much heat.—H. R. R.

The Parson's Freehold.

Now, I do not want to draw down on my poor head vials of wrath from every parson in Great Britain. I speak of the few, and the shortcomings of those few do not extend to their ordinary duties and responsibilities. In matters spiritual they are wide awake, and are ready with many a lesson and excellent precept. It is on the outside of their churches where I think that their vigilance slumbers. It is astonishing, when one considers how often they pass through the churchyard, that they cannot see how miserably neglected it looks. So many of our village churches are set in excellent positions—their architecture, though perhaps not of the first order, is fairly good; the fabric is kept in repair; and more than that, there may be embellishments of stained glass and carved oaken work. Several places will occur to the reader where all that could be done has been done to render the House of God seemly and orderly. But who cannot recall cases where the churchyard—our last resting place—is most obviously neglected? The grass has in course of time grown rank and ugly, for it is only by constant cutting that beautiful turf is made. Not only is the grass bad, but unsightly weeds of all kinds have reared their heads. The principal path may be kept fairly in order, but there is a look of unkemptness everywhere. Some churchyards have been levelled, so as to make the grass easier to manage; that takes away from the picturesqueness, and is not altogether desirable.

There are plenty of churchyards with the old raised mounds that are kept in perfect order, so the thing can be done. The secret lies in the wardens and vicar working harmoniously together. It is not done without expense, but in most villages there can be found old men who for a small wage will gladly potter about with shears, and keep things neat and tidy. People naturally want to visit the graves of their friends, but it does not look well to allow of beaten tracks; a croquet hoop or two will divert the traffic, and hurt no one's feelings. Pleasant is that yard when the stately trees abound; but if there be trees, there is a want of turf where they throw their shadows and spread their roots. This difficulty may be got over by the use of Ivy; there are so many beautiful varieties, and they grow quickly if well planted. One grave I knew where the rough stone crosses were recumbent, husband and wife laid side by side, and now round and about each stone the glossy leaves make a beautiful framework. No matter how dense the trees, the Ivy will grow and will look well at all seasons.

It is possible to make the turf attractive. Violets, white and purple, will grow almost anywhere, and what can be lovelier than a carpet of them? The first of the season are always under the south and east walls, and beauties they are. Some long dead hand in the same yard set lavishly Crocus bulbs, and more recently Daffodils have found their home there. Round the foot of several graves the harbinger of spring, the Snowdrop, raises her pure head, and the saucy Aconite is irrepressible. At one corner someone planted on a young girl's grave a little white Scotch Rose. The friends are all gone, the tree remains. A few Irish Yews may look stiff, but they are stately, and the crimson berries in autumn and early winter make grand points of colour.

The grass never comes quite up to walls of the sacred edifice. A gardening vicar will not wait for his wardens, but will take off a nice piece of grass and turn the ground into a pretty border. Against the buttress I would have some climbing Roses—the evergreen variety, the common Cluster Roses. Dean Hole recommends for this purpose

Félicité Perpetué; I add Ruga and Dundee Rambler,² they are all quick growers, and do not die out as some of the grander Roses would do. Over a porch I know is Honeysuckle, and below the east window is trained Clematis Jackmani and a small shrub bearing crimson berries, which I believe is called Cotoneaster. At the base there are big plants of Christmas Rose, and they are sheltered and preserved clean by huge fronds of common Fern, which at the first frost falling make a capital covering. At the chancel door is the yellow summer flowering Jasmine, and the border is filled with all manner of sweet and pleasant plants. A few "Geraniums" look well against the grey stone and green background, but a lover of beauty needs no hints. Under the north wall little else will grow except Ferns, but they are so graceful in themselves that nothing more is needed.

Unless the architecture of the tower is too good to allow of it, nothing looks so well as Ivy. There is one old Norman church not far away where, the east window being uncoloured glass, Ivy makes the most delightful tracery. A few modest Primroses should lurk in unsuspected corners; in fact, they may be put everywhere where not too hot. The large ox-eyed Daisies flourish well in some places. I have seen them covering children's graves. If a start is given by the vicar he will soon see his efforts well seconded by his people. All might be asked to contribute to the border, for the fuller it is the better it looks, and some of the tall perennials make a handsome show. The big June Lilies must not be forgotten—so pure, so white, so sweet. If natural flowers are found in a churchyard those unsightly china wreaths will vanish as if by magic—the contrast will be too great. There is nothing like educating the taste—false notions of beauty (?) will disappear.

I would make the graveyard speak of life and hope and immortality. Let it be the beauty spot of the village. Death should come as a friend, not an enemy. Ostentatious show is not what we look for, but great beauty may reign around, and the poor sorrowing heart may feel soothed and lightened by the sweet influences that pervade the hallowed place.—THE MISSUS.

A Dearth of Peaches.

THE markets of Britain are usually fully—sometimes too fully—supplied with the various descriptions of fruit in their season, for have we not the whole world to draw our supplies from, and, in some respects, to compete with, which makes the task of profitable fruit growing at times no easy matter. This season Plums of splendid quality have been largely sent us from the Cape, and after their journey of 6000 or 7000 miles, have reached the metropolis in good condition, and many of them have from thence been despatched to the principal towns throughout the country, where they seem to find a ready sale. I do not know definitely what has been done in regard to the supply of Peaches from the same source, but apparently they are not sent in large quantities, or do not stand the journey well, for it is an undoubted fact that the supply of good Peaches is not equal to the demand. This remark not only applies to the early part of the summer, but also truthfully indicates the state of affairs onward till the end of September. High-class fruiterers in the north and midlands are often at their wits' end to know how to get Peaches at short notice. Quite recently I had some conversation with a fruiterer who does a very large trade, and he stated emphatically his difficulty with Peaches was not selling, but getting them, although he was always prepared to pay the price asked by any grower. This has been his experience during the last two or three seasons.

When the outdoor crops are ripe I expect the difficulty in obtaining this luscious fruit is not so great in the south as in the north and midlands, where few are grown in the open air; but it seems to me to open up a good field for enterprise among southern growers, for as soon as the London markets are overstocked with any kind of produce, some of it is quickly despatched to large provincial towns. A still better system of distribution would be for large growers to communicate direct to fruiterers in various parts of the country, and thus save the many intermediate charges which often play such havoc with the grower's returns. I feel sure that British horticulturists are too enterprising to allow this annual scarcity of Peaches to long continue, but those who are first in the field with an adequate supply will, as of old, reap the greatest reward.

Let me now turn to the practical side of the matter, and advance a few ideas as to the best means of producing crops at various seasons. The earliest crop might with advantage be grown in pots, because when the fruit is gathered the trees can be set in the open air, and

the house planted with Tomatoes, and these would be cleared soon enough for filling the house with Chrysanthemums. When early crops are produced from trees planted out, the house is too long empty during the best months of the year to render it as profitable as it should be.

Crops which ripen at the end of June and during July need little fire heat, and the most profitable way of growing them is in large, wide span-roofed houses, or in wide three-quarter spans erected on a sharp sloping bank. In either instance the ordinary precise methods of training should be abandoned. After the trees are planted out in good soil, either the natural soil trenched, or a border specially prepared, the shoots would need a certain amount of shortening back for a couple of years to secure an evenly balanced tree, and should then be allowed to grow on the extension system, simply thinning out the shoots to admit light. A row of short standard trees planted in

in which late crops were grown in the south of England, but further north it would be necessary to pay more attention to training and keeping the shoots thinly disposed in order to secure well ripened wood. Of course houses already in existence could be turned to account for Peach growing, and the orthodox method, training the trees to a trellis fixed to the roof, would in such instances answer admirably; but when houses are specially built for the purpose that method of training is not, in my opinion, the wisest one to adopt from a commercial point of view.

Large quantities might also be grown in the open air by utilising vacant spaces on walls, buildings, and fences having south or south-west aspects; an east aspect is not often suitable for Peaches except in very warm localities, as the cold winds of spring blister the leaves so badly, and the risk from frost when the trees are in blossom is great. In all instances a coping board and canvas, or a

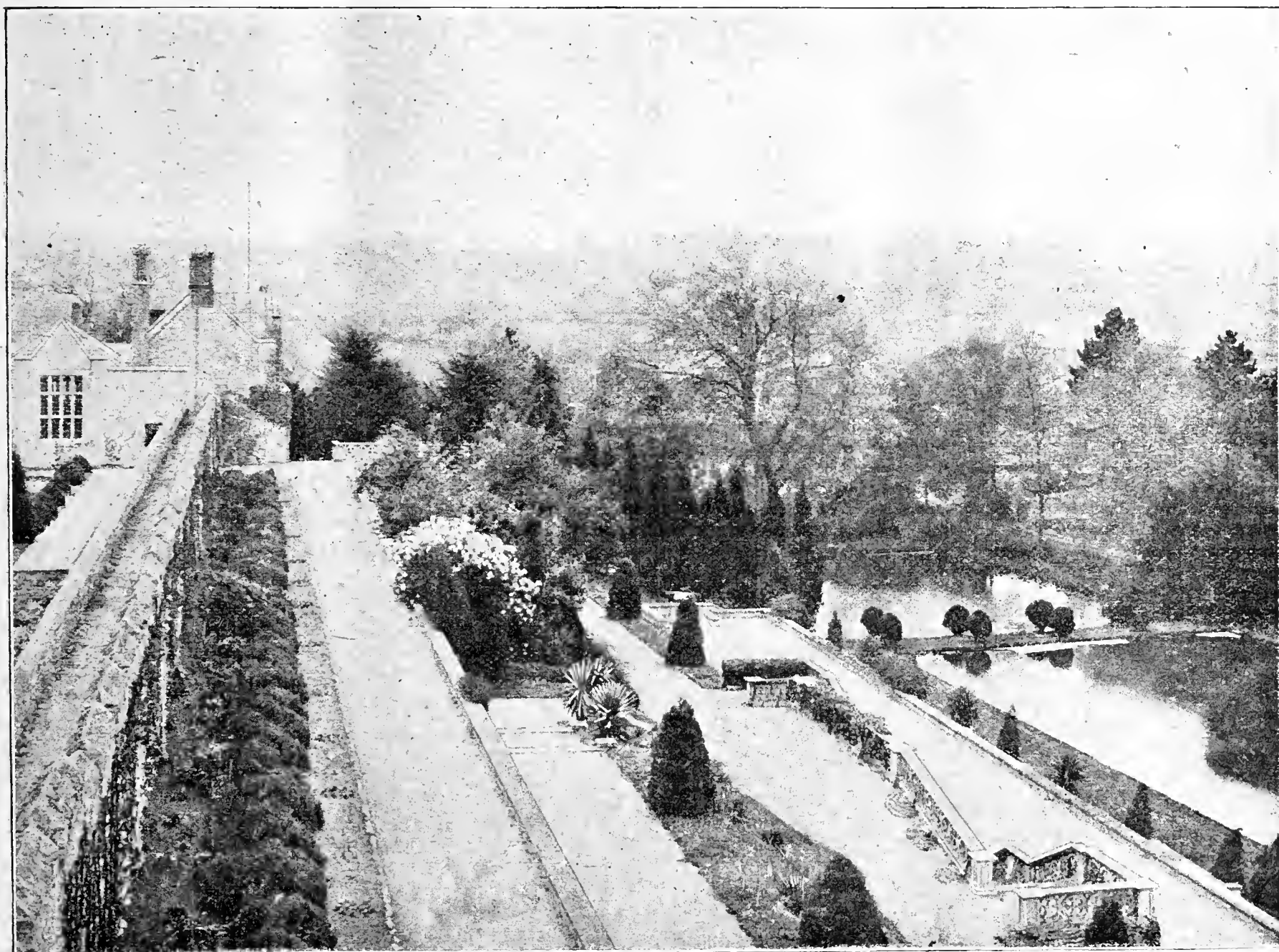


Photo by Mr. G. R. King,

Cardiff.

FIG. 128.—THE TERRACES AND LAKES, ST. FAGAN'S. (See page 485.)

the centre of a span-roofed structure would in time fill the whole available space, but supernumerary trees trained in pyramidal shape ought to be planted around the sides. These could be kept within bounds by periodical root-pruning, and when necessary removed altogether. Trees grown in the above way produce immense quantities of fruit, and seem to succeed as well as Apple trees do in the open air, with this advantage—viz., that a crop may be secured with unfailing regularity each year. In dealing with a hip-roofed house the trees should be planted at the back and loosely trained to a strong trellis erected over the border; this trellis ought to be at least 3 feet from the glass for the convenience of fastening the fruit, as well as for the benefit of the trees, which thrive well and are so easily kept free from insects when kept at a good distance from the roof. In wide houses a row of trees could also be grown along the front and trained to a semi-circular trellis.

The above methods would also be suitable for unheated houses

double thickness of fish netting, ought to be regularly used as a protection from frost at night while the trees are in bloom. If strong, healthy, transplanted trees were procured to start with, and the extension method of training adopted, walls 10 feet in height could be quickly covered, and if the results over a series of years were noted the return would well repay the labour and expense entailed.

Let it be clearly understood that I do not suggest that either walls or fences should be built for the purpose, but that the greatest advantage should be made of those which exist, and that in many instances shelter worn-out or worthless trees, which do not produce fruit enough to pay for the labour of pruning and training. If an outlay can be made in building, let it be expended on glass houses, whether heated or not, as there is then a sure return for the expense involved, as the production of a crop is within the control of the cultivator.—H. D.

The History of the Rose.

THAT the Rose was known to the Israelites, and is mentioned in the Old Testament, there can be little doubt. It was probably known to them by the pre-eminent title *chabalzeleth*, for, although that may have been the general name for a flower, yet, like the Persian *gul*, it may have been applied to the Rose as the flower—the superlative of the floral world. *Rosa spinosissima* and another species is a native of Palestine; but as we have no description of the flower in the Old Testament, whether these or some other flower is intended remains quite uncertain, though some flowers mentioned in its pages are translated into “Rose” in our authorised version.

When we descend to later ages, when descriptions of the flower were given, we cannot but be struck by the almost unvarying name of the flower. In Greek it is *Rhodon*; in German, *Rose*; in Dutch, *Roos*; in Danish, *Rose*; in Swedish, *Ros*; in French, *Rose*; in Italian, *Rosa*; in Spanish, *Rosal*; in Portuguese, *Roseira*; in Russian, *Rosa*; in Polish, *Roza*; in Bohemian, *Ruze*; in Slavonic, *Ruxiza*; in Finnish, *Ruus*; in Welch, *Rhos*; in Anglo-Saxon, *Rose*; and in Gaelic, *Ros*. Everyone of these seems to be derived from a root-word signifying red or ruddy.

The Rose is mentioned by Homer and by Anacreon. By the former in the hymn to Ceres, by the latter in many of his odes, through which we learn that it was a flower remarkable for the beauty of its petals; that it grew amidst thorns; that it had a divine fragrance; was of the colour of the human complexion; that it was the most beautiful of all flowers; “the queen of flowers;” the “flower of love.”

Theophrastus and Pliny state that Roses may be distinguished one from another by the roughness, smoothness, colour, smell, and the greater or smaller number of their flower-leaves or petals. The latter writer, speaking of the Rose generally, thus describes it:—“The Rose grows upon a thorny rather than on an herbaceous plant; it grows also upon a plant similar to a Bramble. There it has an agreeable smell, but not perceptible at any great distance. The whole flower sprouts at first enclosed in a calyx full of seeds, which in a short time swells, and becomes pointed at the summit like green alabaster.* By degrees the flower grows, opens, and expands itself, containing in the middle of its calyx the erect yellow stamina.” This author then proceeds to enumerate eleven kinds of Roses, which, he says, were well known to the Romans. They are the following:—

- | | |
|-----------------------------|----------------------------|
| 1. <i>Rosa Prænestina</i> . | 7. <i>R. centifolia</i> . |
| 2. <i>R. Campana</i> . | 8. <i>R. græca</i> . |
| 3. <i>R. Milesia</i> . | 9. <i>R. græcula</i> . |
| 4. <i>R. Trachinia</i> . | 10. <i>R. moscheuton</i> . |
| 5. <i>R. Alabandica</i> . | 11. <i>R. coroneola</i> . |
| 6. <i>R. spineola</i> . | |

Four other kinds of Roses are mentioned by Pliny in different parts of his “Natural History,” but of these he gives no description; they do not appear to have been in such high repute as the above, though somewhat esteemed for their medicinal properties. These kinds are called *R. alba*, *pallida*, *spinosa*, and *quinquefolia*.

Of the first two kinds of the eleven more particularly described by Pliny, the Campanian was the earliest in flower, and the Prænestine the first which ceased blowing. The Milesian was of a very bright colour, and consisted of not more than twelve petals; it was the latest which came into blossom. The Trachinian Rose was less red than the Milesian. The colour of the petals of the Alabandic Rose inclined to white; it was less esteemed than any of the preceding. The *Rosa spineola* had a large number of very small petals, and was the least esteemed of all. The *Rosa centifolia*, or Hundred-leaved Rose, had many small petals. It grew in Campania in Italy, and in Greece near Philippi; to the latter place, however, Pliny says it was not indigenous. It grew also in the vicinity of Mons Pangæus, and the neighbouring inhabitants, taking it from this place, cultivated it for profit. The Rose called *græca* by the Romans, but by the Greeks *Lychnis*, had only five petals; it was of the size of a Violet, and grew only in moist situations; it was scentless. The petals of the *Rosa græcula*, which were very broad, were rolled or convoluted into a ball; they did not expand, except when forced by the hand, and had the appearance of always growing. The *Rosa moscheuton* had petals shaped like an Olive, and grew upon a stem like that of the Mallow. (“*Funditur e caule malvaceo*.”) The *Rosa coroneola* was an autumnal Rose, and, when compared with other kinds of Roses, had a flower of a middle size. All of the above-mentioned Roses, according to Pliny, were destitute of fragrance, with the exception of the *R. coroneola*. The Prænestine and Campanian Roses obtained their names from their respective localities. The Trachinian Rose appears to have been a native of Thessaly, and grew near the city of Heraclea, called also

Trachinea. The Milesian and Alabandic Roses were probably foreign kinds, the former deriving its appellation from Miletus, a city in the Island of Crete, where it was first found; the latter from Alabanda, a city of Caria, in Asia Minor.

Mentzelius in his “Lexicon Plantarum,” regards the Prænestine, Trachinian, and Milesian as varieties of what he calls the *Rosa rubra saccharina*, which he considers the same as the *R. græcula* of Pliny. Mentzelius and Clusius both agree in calling the Milesian Rose the Rose de Provence. Ferrarius, in his work entitled “*Flora, seu de Florum Cultura*,” states that the Rose called by him “*Rosa alba multiplex*” has by different authors, been regarded as either the *Rosa spineola*, *Campana*, or *Alabandica* of Pliny. He says, also, that some authors consider the *Rosa damascena multiplex* to be the same as the *Rosa coroneola*, while others, again, think it is the *Rosa spineola* mentioned by Pliny.

The flower enumerated among the Roses by Pliny, and which was called by the Romans *R. græca*, but by the Greeks *Lychnis*, is the flower mentioned by Dioscorides under the name *Lychnis stephanomantike*, or *Lychnis coronaria*. It is generally considered to have been a species of our present genus *Lychnis*, commonly known as the Rose Campion. Dioscorides says the “*Lychnis stephanomantike* is a flower resembling the white Violet, but of a purple colour.” It was woven into crowns, hence called *stephanomantike*, or *coronaria*.

There is one other Rose mentioned by Pliny, but not classed by him with the kinds most celebrated among the Romans—namely, the *Rosa sylvestris*. This Rose, called also *Cynorhodon* by Pliny, and by Scribonius Largus *R. canina*, grew upon a Briar, according to the former author, and had a leaf resembling the impress of a man’s foot. Theophrastus, who also mentions this Rose, says it bore fruit of a red colour. Dioscorides agrees with this account, and says the fruit resembles the nucleus of an Olive. Pliny, however, states that this plant bears a black berry, which, Bodæus a Stapel remarks, no other author has mentioned, and considers that the passage in Pliny refers to another plant subsequently mentioned by that author. Among the thorns of the stem of the *Rosa sylvestris* grew a round sponge-like substance resembling a Chestnut; the presence of this excrescence upon this kind of Rose is also mentioned by Marcellus, an old writer on materia medica. Pliny says it grew particularly upon the *Cynorhodon*, and that it contained a worm or grub which produced the insects called cantharides. The same insects are mentioned by Aristotle to issue from a worm found upon the *kynakanthe*, or “Dog-briar” (?) In the spongy substance alluded to we recognise the moss-like prickly excrescences which are found upon all Rose trees; but especially upon the *Rosa canina*, and which are the habitations of the insect called *Cynips rosæ*.

Commentators on Pliny regard the *R. sylvestris* of this author to be the *R. Eglanteria* of Linnæus, now the *R. rubiginosa*, which, according to Fries, Linnæus for a long time referred to the species *R. canina*. The *Cynorhodon* of Theophrastus, the *Cynosbaton* and *oxyacantha* of Dioscorides, the *cynacantha* of Aristotle, and the *R. sylvestris*, *cynorhodon*, *cynosbaton*, *cynapanxim*, and *neurospaston* of Pliny have been generally considered as identical. There still appear, however, to have been some doubts upon this point which are not yet satisfactorily explained. It would be uselessly occupying space to enter at length upon the consideration of this question. The *R. sylvestris* appears to have obtained its synonym *R. canina* or *cynorhodon* from a supposition that its root was a beneficial remedy for bites of mad dogs; an instance of its curative powers is cited by Pliny.

The Roses mentioned by Theophrastus are four only—viz., 1, *Rhodon pentaphylla* (five-leaved); 2, *R. dodekaphylla* (twelve-leaved); 3, *R. eikosaphylla* (twenty-leaved); 4, *R. ekatontaphylla* (hundred-leaved).

The first of these is considered by Stackhouse to have been the same as the *Rosa canina* of Linnæus;* the second has not been referred to any species with which we are at present acquainted; the third is thought to resemble the *R. cinnamomea*; and of the fourth, or Hundred-leaved Rose, Theophrastus says, “The inner petals are exceedingly small, for the blossoming is such that some are inward and some outward. The greater number of such,” he adds, “are about Philippi.”

Theophrastus gives no detailed account of the Roses he has named; he merely says that they are not large, and have not a pleasant smell. He enumerates the Rose tree among perennial and woody shrubs, also among those plants which have their fruit placed under their flowers, “a peculiarity,” he remarks, “which, on account of its great size, is most plainly to be seen in this plant.” Some classical writers, who have endeavoured to show that the odes of Anacreon which eulogise the Rose are frauds, have gone so far as to say that Theophrastus never saw a Rose, and support this opinion from the very cursory manner in which he notices the plant. It is impossible, however, to coincide with them.

* The “alabastrus” was a perfume-box which the Rose-bud resembled in form.

* Illustrationes Theophrasti, &c. Auctore J. Stackhouse. Oxon, 1711.

Hybrid Streptocarpus.

ONE can name few, if any, florists' flower upon which the grower has not exercised his skill during the past twenty years. By the aid of hybridisation and cross fertilisation the forward movements have been numerous and singularly advantageous. When we look at the Chinese Primulas, Cyclamens, Gloxinias, Chrysanthemums, Roses, and others, we see that while one or two in each may have been with us for from twelve to twenty years, the great majority are of modern production. The craze is apparently for novelty, and naturally enough the skilled hybridist does his best to satisfy the general demand.

As far as hybrid Streptocarpus are concerned, we must come down to within seven or eight years before we find them being operated upon in earnest. Prior to that the range of colouration provided by the species was comparatively limited, though what we had were very distinct the one from the other. As with the flowers so with the foliage, which presented marked characteristics. Here, then, was a new field, and one of the first to venture on it was the firm of J. Veitch and Sons of Chelsea, who, seeing the commercial popularity of a hybrid race, urged Mr. John Heal to practise his hand. The work was soon under weigh, and at the present moment we are feeling the beneficial results, for the advance made has been most extraordinary. Where six years back there was a limited selection of colours, and in some cases ungainly foliage, we now have an abundance of shades from which to choose, and the plants are, moreover, of attractive habit.

The section known as Veitch's hybrids has become immensely popular by reason of the varied colours provided in the flowers, the ease with which they may be grown, and their remarkable floriferousness. Of course some people do not succeed in their culture; but this is the case with all kinds of plants. So far as can be gathered, however, the chief cause of failure is the provision of too much heat. The seedlings should be raised in a warm temperature, but during all the subsequent stages a greenhouse is the most suitable place that can be found for them. In a greater heat the plants are subject to attacks from insect pests, notably mealy bug, and the peculiar formation of the leaves makes their eradication almost impossible. Thus the plants soon commence to suffer, and the results attained to are frequently the reverse of satisfactory. But when the plants are treated on more rational lines, as is the case at the Feltham Nurseries of Messrs. Veitch and Sons, one may look in vain for insect pests; they are absolutely kept at bay by good cultivation. The spectacle presented by a house 100 feet long full of splendidly flowered plants will be readily imagined by those persons who saw the collection at the Temple Show.

The strain now in all justice termed Veitch's New Hybrids continues to make material advance, and never prior to this year have the plants been so good. It is very apparent from their condition that they are similar to most other plants in preferring a purer air in which to make their growth to the tainted atmosphere of the metropolis. The flowers are clearer in colour, and with the leaves

have greater substance. Amongst the diverse colours we find crimson, crimson purple, purple, rose, flesh, purple violet, pink, pure white, white with purple blotches, and white with rose blotches. As indicative of their floriferousness it may be added that on one footstalk were counted as many as nine perfectly developed flowers. As each plant produces several spikes one can readily picture the effect of a good collection.

As an advance upon this section we now have Streptocarpus achimeniflorus, which was obtained by fertilising *S. polyanthus*, a pretty South African species having bluish purple flowers, with a white form of one of the firm's original hybrids. This has resulted in a plant of splendid habit, hardy constitution, and even greater freedom of flowering than the hybrids. The photographic illustration of *S. a. albus* (fig. 129), and which was lent by Messrs. Veitch & Sons, gives an admirable idea of the habit of the plant, but the flowers are shown far too small. One can scarcely grasp from the illustration the breadth of the flowers, or of the great length of tube which add so

greatly to its beauty. Subsequent to this a type with larger flowers has been secured, and this is named *S. a. giganteus*. These give blooms of mauve, Cambridge blue, and lavender shades. There are plenty of Streptocarpus at Chelsea now, and those who wish to see them may do so at practically any time.—F. W. H.

[An award of merit was recommended for this strain by the Floral Committee of the Royal Horticultural Society on Tuesday.]



FIG. 129.—STREPTOCARPUS ACHIMENIFLORUS ALBUS.

Notes on Flea Life

A FRIEND of mine was remarking lately that he thought gardeners often had more annoyance from fleas than many people; the idea seemed laughable, but it is possible he was right. In such a matter we cannot expect to get any statistics which would give conclusive evidence. It is a fact, however, that gardeners have often to do with matting and sundry woollen substances, which are presumed to be nurseries for the flea tribe;

also some of them keep tools and other appliances in wooden sheds not of recent construction, and these are supposed sometimes to harbour fleas. Again, dog kennels are frequently placed in a yard near to the garden, and they afford home for the insects, both in the juvenile and adult stage. Though the dog flea may prefer to take its aliment from the quadruped, I consider there is no doubt upon the point that both this species, and the one infesting cats, will attack mankind when they have the chance.

As an entomologist I am obliged to own that the history of the flea is lamentably meagre, and we have not been able to ascertain yet some most important particulars concerning its habits. Thus, for instance, we do not know whether there is only a yearly brood or a succession. There are certain months when they appear to be more numerous, or active at least; these are in the spring and autumn. The erratic habits of *Pulex irritans* afford one excuse for this, and the undesirableness of much acquaintance with it is another. A philosopher who has studied the character of the flea remarks that it exhibits a singular combination of deep cunning and reckless hardihood, which is probably near the

truth. There is a good deal said now about the conveyance of disease germs by flies, mosquitoes, and other insects, but I do not think that the flea is a sinner in that way; there seems to be little likelihood of germs attaching themselves to its horny body. It would be unpleasant to think this possible, since the flea of the street vagrant can transfer itself to the person of a passing lord. Quite bad enough, however, are the effects; in some individuals repeated punctures made by the flea actually set up a sort of fever, which rather suggests that this insect must, like the gnat tribe, inject a poisonous fluid after it has pierced the skin.

Many folks are surprised when they are told that the flea commences life as a slender footless grub, which at maturity spins a cocoon, from which, in due course, the leaping insect emerges. Very little notice has been attracted by this grub, because it does not seem to be a blood-sucker, and lives where it is not likely to be looked for, or, if sought, discovered, owing to its minute size. Evidently, one of the places which would be likely to yield it is the hair of some animal that is infested by fleas. A lady, says one entomologist, was nursing her favourite dog, and afterwards found in her lap a host of tiny objects, which on examination were ascertained to be flea eggs. This explanation may account for the early life of some of the fleas that belong to various animals, but it hardly helps us to clear up the history of our particular flea, possibly the larva or grub might live amongst the clothes of dirty people. Mats, rugs, carpets, hassocks are believed to be the principal abodes of flea grubs. Churches are too often made by these insects their headquarters, the grubs living on the cushions, matting, or hassocks, and then as fleas attaching themselves to, and departing with, the visitors or worshippers. Miss Ormerod relates an instance that came under her observation, where, on the periodical removal and beating of hassocks in a churchyard, armies of fleas were seen travelling in all directions, showing that they are favourite resorts of the insect.

It is impossible to accept the theory, for such it only can be, that the old fleas feed the young ones by disgorging blood which they have themselves sucked. In fact, the notion is ridiculous, and the fate of the juveniles would be bad indeed, when the wandering habits of the flea are taken into account, supposing they did depend on parental attention. A flea that is in London some morning may travel with somebody hundreds of miles before night. Again, some have suggested the flea grub may prey upon various mites or Acari, which, no doubt, do commonly occur upon the materials where the insect is reared. The insect was allotted a place in Miss Ormerod's annual report upon insects for 1898, and I think we may accept her opinion on this subject. She believes that with their trenchant jaws the flea grubs bite up and thrive upon the dry substances they live amongst, their food being solid, while that of the adult is liquid. Of course she does not assert this about fleas in general, though it may be true, but speaks as to *Pulex irritans* in particular. The fact is not unimportant, since there are lurking-places of the flea grub which are exposed to atmospheric influences, and their growth is favoured by dry weather. Hence, after the hot, dry summers of 1898, 99, adult fleas were very abundant and troublesome. Possibly, but I throw this out as a conjecture, the moist weather of last February may be the cause of a less number of fleas than usual this spring in some districts. That fleas deposit eggs in the spring is certain, and that brood of grubs is said to feed up rapidly, but there may be also a winter brood, produced by eggs deposited during the autumn.

Miss Ormerod gives instances reported to her of the sudden appearance of fleas in such numbers as to amount almost to a plague. Thus the village of Haslington was found to be swarming with them. "cottages, fields, a large farmhouse (the inmates of which were scrupulously clean, indoors as well as out), really in colonies, not only the poor, but the better class of people being troubled; all ordinary means to get rid of them proved of no success." This lady advises a research for the grubs whenever that can be done, and the washing of articles they may haunt with hot soapsuds. Those things which cannot be washed might be sprayed with benzine.—ENTOMOLOGIST.

The Tea Crop in India.—The tea out-turn for the month of May in the Assam and Sylhet and the Terai districts was normal, in the Duars and Darjeeling poor, while in Cachar both the out-turn and prospects are good. In Darjeeling the immediate prospects of the crop are fair. In some portions of the Assam district the leaf is backward owing to the generally unfavourable weather which prevails.

Notes on Ferns.

Maidenhair.

To have *Adiantum cuneatum* in good condition for cutting the plants must not be grown in a close atmosphere, or the fronds fade almost directly they are removed from the plants. Those started in brisk heat early in the season should have pushed freely, and may now be prepared by placing in a cooler temperature. If the plants are gradually hardened to this treatment they will not only solidify the fronds already made, but they will continue producing them, which in their turn will be ready for cutting. Thus a succession of fronds will be maintained for a long time. During the whole of the summer months this *Adiantum* should not be subjected to too much heat, for it is not required; on the contrary, the plants do much better in an intermediate structure. My most useful plants for the late summer and autumn were started in heat, and then grown in a cool house until the fronds were used. It is a good plan to divide into two or three plants that have had the fronds used from them and are too large for 5 or 6-inch pots, and place a portion at this season of the year in wire baskets 7 or 8 inches in diameter, growing them at the back of a vinery suspended so that they can be reached from the path when they require water. The plants really do better when grown on this principle than when in pots, and yield abundance of fronds for cutting. Sporeling plants required in a very small state in thumb pots for decoration must not be grown in too much heat, or their fronds become weakly and their beauty is destroyed.

Davallias.

These are amongst the most useful of Ferns for cutting, and such varieties as *D. bullata*, *D. elegans*, *D. canariensis*, *D. dissecta*, and others thrive much better in small baskets the same as advised for *Adiantums* than they do in pots. While making their growth these plants enjoy the moist heat of a vinery, and the cooler treatment afterwards also suits them admirably, hardening their fronds for cutting. Although these varieties grow remarkably well under comparatively cool treatment, they nevertheless produce more than three times the number of fronds when grown in heat. *D. dissecta* is deciduous during the winter, but it is no worse for this, as it starts freely into growth directly it is introduced into heat. Plants that were started three or four months ago have abundance of fronds, and a few weeks' cool treatment will render them durable when cut. The fronds of these Ferns when well hardened are amongst the very best that can be grown for packing to travel a long distance.

Microlepia hirta cristata.

This a charming Fern for decorative purposes in 4 or 6-inch pots singly in vases, or even in the centre of the dinner table. From a large plant it is not difficult to cut a number of small pieces. These soon establish themselves in small pots in heat, and should then be grown in a vinery or an intermediate structure, potting them as they require more root room, for if grown in too warm a temperature they become a prey to scale, and fail to produce their beautiful crested fronds. Young plants started now will be symmetrical specimens, if not crowded together, for use during the autumn and winter.

Polystichum proliferum.

Where small Ferns are required for associating with other plants for room embellishment, this should be raised in large numbers. It is one of the most serviceable plants that can be grown, will give less trouble in preparation than probably any other variety, and is easily increased. The old fronds should be pegged upon the surface of light soil, and young plants are produced the whole length of the fronds. When these are sufficiently large and well rooted the fronds should be cut off, the young plants lifted and transplanted into pans singly until they are large enough for 2-inch pots, which is the case in a very short time if kept in a vinery or warm moist structure. For many purposes of decoration the plants need not be potted, but lifted from the boxes when required. If larger plants are necessary those that have done duty can be transferred into 4 and 5-inch pots, or be planted outside, for this Fern is perfectly hardy.

Selaginella Kraussiana.

Probably this is the most useful species that can be grown for covering the surface of pots and for all other decorative purposes for which such plants are required. Plants in shallow pans, small pots, and boxes should be prepared at intervals of two to three weeks, according to the demand. When used for the surface of pots and other similar purposes I have found it to last decidedly best when established in shallow pans, so that the roots and a portion of soil can be removed with the plants. A sufficient stock of established plants should always be kept on hand and thoroughly hardened in a cold house some weeks previous to being used. It is a good plan to establish a stock on the surface of Vine or Peach borders, or other similar positions, in a little light sandy soil ready for filling pots and pans as required.—F. L.

NOTES & NOTICES

Recent Weather in London.—June was ushered in with cold rain and boisterous winds. On Saturday little rain fell in the metropolis, but it continued very dull and cold until the afternoon, when the sun shone for a brief space. On Whitsunday it was fine and much milder. Bank Holiday was brilliantly fine and very warm, with a pleasant breeze, and holiday makers turned out in great force. Tuesday, too, was fine, as also was Wednesday.

Rawtenstall Park.—The premiums of £50, £30, and £20, offered by the committee appointed to lay out the proposed park and playground at Oak Hill for the best plans have, we learn, just been awarded. Each plan was to entail a cost of not exceeding £4000, including the cost of materials, clerk of works, commission, and other expenses. The first prize was gained by Mr. E. Thomas, designer and contractor, Aughton, near Ormskirk; and Mr. David Bird, architect, Atlantic Chambers, Manchester. Second, Messrs. W. Barron & Son, Borrowash, Derby; and third, Messrs. Hinnell & Murphy, engineers and surveyors, Bolton.

Fruit for London.—London has been specially favoured recently with a large and cheaper supply of fresh fruits than has ever been known. About 25,000 cases of Australasian Apples are in the hands of dealers. French Cherries are coming in large quantities, and some of them, sound and well coloured, are being sold as low as 3d. a pound. Green Gooseberries of English growth have been sent to market in ton lots, and have sold at 2d. a pound. A further shipment of fresh Mangoes has arrived from the East, and new Gros Maroc Grapes have sold at 6s. a pound. Belgium has shipped large quantities of forced Grapes. From the Canaries the week's supply of bunches of Bananas came to 20,000.

Wicken Fen to be Preserved.—Naturalists, especially botanists and ornithologists, will be pleased to hear that the last remaining piece of wild fenland in the fen district, which has been marked down for reclamation for some time past, is, after all, to be preserved in its wild state. This last remnant of the great swamp, Wicken Fen, has been a paradise to the student of those forms of life that only flourish among such surroundings. It owes its preservation to the fact that the National Trust for the preservation of places of national interest has secured a small holding in it, and a number of enthusiastic natural scientists have also bought up bits of the place. A number of our rarer birds, insects, and plants find their last refuge there, having been driven by drainage and cultivation out of the huge areas over which they were formerly spread.—("Westminster Gazette.")

Bristol Gardeners' Association.—The opening meeting of the summer session was held at St. John's Parish Room on Thursday, May 31st. Mr. G. Brook presided over a large attendance. Mr. W. J. Hockey of Yatton was the lecturer, his subject being "The Kitchen Gardener and what is Expected of Him." In a clear and concise manner he described the most suitable position for a vegetable garden, the soils best fitted for vegetable culture, with the proper methods of treating it, advocating good drainage, trenching, effectual manuring, and an abundant supply of water laid on. With regard to manuring, he insisted strongly on the advantage of some knowledge of chemistry to gardeners, especially in the use of chemical manures. He also advised all to keep a complete diary of operations for reference as well as comparison of one season's results with another. He claimed for kitchen gardening that it was the highest point in the gardener's operations, and urged the constant endeavour to secure the best possible results. A short discussion followed, and Mr. Hockey was heartily thanked for his attendance and lecture. Prizes were offered for three Cabbages and a brace of Cucumbers, that for the former being secured by Messrs. Ross and Binfield, the latter by Messrs. Hutton and Marshall. Certificates of merit were awarded Messrs. Ross and Shaddick each for a *Cypripedium barbatum*, Mr. Thoday for Carnation and Gloxinia, and Mr. McCulloch for a collection of Zonal Pelargonium blooms. A feature of the exhibits was a collection of several varieties of Lilac blooms shown by Mr. E. Poole, F.R.H.S., gardener to Lady Cave, Cleve Hill, Downend.

Gardening Appointment.—Mr. H. R. Richards, for some years gardener to Col. Trafford Rawson, Coldham Hall, Bury St. Edmunds, has been appointed head gardener and estate superintendent to Lady Ella Russell of Chorley Wood House, Rickmansworth, Herts, and enters upon his duties on August 12th.

Charlock-spraying Demonstration.—A successful demonstration of Charlock-spraying was carried out at Luton, Beds, in May. A week previously about half an acre of ground, thickly covered with a crop of Charlock, had been sprayed with a solution of copper sulphate. At the same time portions of this plot were kept covered during the operation of spraying, so as not to be touched by the solution. On the day of the demonstration this plot presented a curious appearance, and afforded an excellent example of the effects of spraying with copper sulphate. The whole area was bare ground, except for the portions covered during the spraying, where the Charlock was still growing luxuriantly. The Bedfordshire Chamber of Agriculture has appointed a committee to watch the progress and report the results of these experiments.

The Tree Monger.—One of the quaintest, prettiest old-world spots near the metropolis, and one that has many historic associations, is in the market. This is Whitton Park, Twickenham, originally the residence of that Duke of Argyll, who was dubbed by Horace Walpole the "tree monger." The Duke laid out the grounds in most sumptuous style, amongst the statuary being the famous Highland Piper and Dog, in marble, by Gabriel Cibber, the identical piece of sculpture upon which De Foe penned his grotesque story of the dead cart in his "History of the Plague." The Duke planted the fine trees upon the estate in 1724, and whatever Walpole's contempt for him, deserves the thanks of the nation for his services to forestry and the introduction of many fine foreign trees and ornamental shrubs into landscape gardening. Amongst others who have resided at Whitton Park in later days was Sir Thomas Chambers, R.A.

Brockwell Park.—At its meeting on Tuesday, 29th ult., the Parks Committee of the London County Council recommended a contribution of £30,000 towards enlarging Brockwell Park. The proposal was the purchase of 43½ acres of land lying to the north of the park, and bounded on the east by Dulwich Road, on the north by Water Lane, and on the west by Brailsford Road and the strip of park forming the Brixton entrance. Part of the property was in hand and part was sub-let. Roughly about one-half would be immediately available for the public use. The land was situated in a part of London which was being rapidly covered with houses, and was, indeed, one of the few remaining pieces of land within the four-mile radius from Charing Cross which could be utilised for open space purposes, unless the Council should adopt the very costly alternative of purchasing property and clearing it for the purpose. It was for the most part suitable for cricket and other outdoor games, and on its acquisition a great deal of it could immediately be brought into use for that purpose. This scheme would require Parliamentary sanction, and, subject to that, the Council agreed to the recommendation.

The Devon and Exeter Gardeners' Association.—The committee have much pleasure in announcing that they, by permission received from the gentlemen named, have been able to make arrangements for another of those pleasant and profitable excursions on the lines followed so successfully in past years, and it is hoped that the members, honorary members, and friends may join this excursion in good numbers, so that it may be as great a success as those which have preceded it. A generally-expressed wish that our annual excursion this year should be to the eastern portion of the county—towards the borders of Dorset—weighed with the committee in adopting this circular trip. The party will leave Queen Street Station on Wednesday, July 11th, by the 9.15 train for Axminster, reaching there at 10.18. At 11 o'clock we proceed in brakes to Lyme Regis, where luncheon will be served. At 1.30 we shall resume the journey and proceed to Pinhay, the seat of Wilton Allhusen, Esq. After inspecting the gardens and grounds there we proceed to Rousdon, the seat of Sir Cuthbert Peek, Bart., where, in addition to the interesting gardens and grounds, the remarkable and historical landslip will be inspected—interesting geologically and in many other ways. From the landslip a half-hour's walk will bring us into Seaton, where a substantial meat tea will be served at 5.30. The return journey will be made from Seaton at 9.35. Fare, inclusive of all charges, members 7s. 6d., friends (non-members) 10s. Tickets must be taken not later than Friday, 6th July.—ANDREW HOPE, Hon. Secretary.

The Linnean Society.—At a recent meeting of this society the Hon. C. Ellis exhibited photographs of a *Taxodium distichum*, growing at Oaxaca, in Mexico, and of another gigantic tree, a native of Cambodia. The circumference of the former, at a height of 3 feet from the ground, was stated to be 143 feet, while the height was estimated to be not more than 100 feet. The native name for this tree is Sabino.

Gardeners and Floral Decorations.—At a meeting of the Leeds Paxton Society, on Saturday, Mr. John Turton, gardener to Mr. Schreiber of Becca Hall, gave an interesting lecture on "Room Decorations." He pointed out the necessity of so arranging and massing flowers and foliage plants that they shall harmonise with their surroundings, and he gave many useful hints as to methods and designs to get the best effects with flowers and Ferns with a view to blending with various shades of tapestry. Afterwards, Mr. Turton answered a number of practical questions, and was accorded a hearty vote of thanks.

Royal Meteorological Society.—At the invitation of the president of the Royal Meteorological Society a meeting was held at the rooms of the society on Thursday afternoon, the 31st ult., to consider the question of a memorial of the late Mr. G. J. Symons, F.R.S., the distinguished meteorologist and founder of the British Rainfall Organisation. It was resolved unanimously that the memorial should take the form of a gold medal, to be awarded from time to time by the council of the Royal Meteorological Society for distinguished work in connection with meteorological science. The meeting appointed an executive committee, representing many of the societies with which Mr. Symons was associated, to take the necessary steps to raise a fund for that purpose. Contributions will be received by the assistant secretary, Mr. W. Marriott, 70, Victoria Street, Westminster.

National Rose Society.—A special general meeting of the National Rose Society was held on Tuesday last at the Horticultural Club, Hotel Windsor, for the purpose of electing an honorary treasurer in succession to the late Mr. T. B. Haywood. Dr. Maxwell T. Masters occupied the chair, and there were about a score of members present, including Mr. Ed. Mawley, one of the honorary secretaries. The notice convening the meeting having been read, Mr. Mawley referred briefly to the loss the society had sustained in the death of their late admirable treasurer, and further stated that he had ascertained that Mr. Charles Burt Haywood, son of Mr. T. B. Haywood, had consented to fill the office until the close of the year. It having been proposed, seconded, and carried unanimously, that Mr. C. B. Haywood be elected treasurer for the remainder of the year, the special meeting was brought to a close. It is hoped that the new treasurer may be induced to continue to undertake the duties for an unlimited period, as his late respected father by his business aptitude brought the society's affairs into an excellent state, which the son could maintain.

The Oak, the Ash, and the Weather.—Whether the Oak or the Ash is first out depends on the soil on which each happens to stand—whether warm gravel or cold clay; also upon the more sheltered position. The proverb is about as scientific as the countryman's saying:—

"A Saturday moon
And a Sunday full
Never was noa good
And never will."

JOSEPH BLOMFIELD (in the "Daily Mail.")

¶ The saying should read:—

When the Oak is out before the Ash,
Then 'twill be but a little splash;
When the Ash is out before the Oak,
Then the summer will be a soak.

The Oak was a month behind the Ash in the years 1816, 1817, 1821, 1823, 1828, 1829, 1830, 1838, 1840, 1845, 1850, and 1859, and all the autumns were unfavourable and the summers wet. On the other hand, the Oak was in full leaf many weeks before the Ash in 1818, 1819, 1820, 1822, 1824, 1825, 1826, 1827, 1833, 1834, 1835, 1836, 1837, 1842, 1846, 1854, 1868, and 1869, when the summers were hot and dry, and the harvests good. In the remaining years the two trees came into leaf at practically the same time, and the seasons were decidedly average ones.

—C. W. BROWN (in the "Daily Mail").

June Prospects.—June "the womanhood of May," although it made a bad beginning, usually has a promise of better things, and we look for 179 hours of bright sunshine and a considerable increase of temperature. The mean temperature for June averages 60°, while the highest reading we have had since 1871 was 91° in 1878, and the lowest 35° in 1880. The average rainfall for the month in London is 2 inches.

May Weather at Hodsock Priory, Worksop, Notts.—Mean temperature, 50.1°; maximum in screen, 70.7° on the 17th; minimum in screen, 30.6° on the 11th; minimum on grass, 23.0° on the 17th. Number of frosts in shade, two; on grass, thirteen. Sunshine, 113 hours, or 23 per cent. of possible duration. Difference from average - 0.61. Rainfall, 1.72 inch; difference from average - 0.64. Rain fell on ten days; maximum fall, 0.86 on the 8th. Rain from January 1st, 10.38 inches; difference from average + 1.17. A dull but dry month, with a good deal of N.E. wind and very little warm weather.—J. MALLENDER.

May Weather at Dowlais.—Rainfall 3.27 inches, which fell on fourteen days; greatest fall 0.96 inch on the 21st; for the same period 1899 4.30 inches. Temperatures: mean maximum, 57.87°; highest reading 71° on the 18th; mean maximum 36.032°; lowest reading 28° on the 17th; below freezing point on eight nights. Sun temperature: mean 65.903°; highest reading 88° on the 18th. Sunless days ten. The prevailing direction of the wind was N.E. A month remarkable for the bitter cold, strong winds experienced, and the very high day temperatures on the 16th and two following days; and the night temperatures 31°, 28°, and 29° respectively.—WM. MABBOTT.

A Cold May.—"Changeable, cheerless, and chilly" expresses the type of weather we have had during the month of May. The mean day readings, as well as the night readings, were below the average, and on the 10th the thermometer in the screen registered 32° both at Brussels and Loughborough, and only 34° at Oxford. Frost occurred on four nights between the 13th and 19th, and on the 16th, at Loughborough, the reading of the exposed thermometer was as low as 25°. The highest reading during the month in London was 71° on the 27th. The rain god was so busy distributing 5 inches of rain at Blacksod Point that his duty to the metropolis was forgotten, and we had a deficit of over an inch of rain during the month, and fifty-five hours too few of bright sunshine.

The Weather.—Ugh, here's weather for the first of June—cold, wild, wet, wretched! These are adjectives enough, but all needed to fully describe the condition of things meteorological on this the first of leafy Juno. Well, the month is leafy enough—it is gloriously leafy, and when the temperature is pleasanter the trees are beautiful to look upon. But what pleasure is there in doing so when a cold north-easter is blowing, and a very cold rain is falling? Certainly, we needed the rain, but we needed warmth more, and we have got instead of summer bread, winter stone. Surely the summer with its genial warmth and especially soft balmy nights will come some time, but when? We rejoice when we escape very severe cold spells in the winter, but what a penalty we have to pay for such mildness in the long, cold, cheerless springs, and summers that very rarely begin until we have reached the traditional midsummer!—A. D.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
May and June.										
Sunday.. 27	S.S.E.	deg. 61.1	deg. 54.3	deg. 70.2	deg. 40.0	ins. —	deg. 55.6	deg. 53.5	deg. 50.9	deg. 32.5
Monday.. 28	W.N.W.	58.0	54.2	67.5	53.5	—	58.2	54.3	51.1	49.9
Tuesday 29	W.N.W.	58.4	51.3	65.0	42.1	—	57.9	55.1	51.3	32.5
Wed'sday 30	N.N.E.	52.4	48.3	59.4	47.9	—	57.5	55.1	51.5	40.1
Thursday 31	N.N.E.	50.9	47.9	55.9	47.4	0.09	56.7	55.1	51.8	46.5
Friday .. 1	N.N.W.	48.8	47.7	52.6	47.6	0.12	55.5	54.9	51.9	46.2
Saturday 2	N.N.E.	52.7	51.6	62.7	47.8	—	53.0	54.2	52.1	46.8
MEANS ..		54.6	50.8	61.9	46.6	Total 0.21	56.3	54.6	51.5	42.1

A remarkably dull week; some days quite sunless. Small quantities of rain fell on two days.



The Poisonous Sumach.

SINCE writing to you we have found out that it is the *Rhus Toxicodendron* that causes the skin irritation. Would you mind making it known amongst your numerous readers that this, although a beautiful and quick growing creeper, is decidedly injurious to have upon a dwelling house? Last Tuesday I cut away a few shoots; on Wednesday my face and arms began to swell, and on Friday I was unable to see out of my eyes. As I stated last week, my mistress has had several severe attacks, and could not make out which creeper caused it. Now we know for certain. —F. CROOK.

[This letter refers to a query on page 494 relating to the action of *Rhus* leaves supposed to be *Ampelopsis*. There are two kinds of poisonous Sumach, *Rhus Toxicodendron*, known in the U.S.A. as "Poison Ivy" or "Poison Oak," and *Rhus venenata*, known as "Poison Elder" or "Poison Dogwood." The former is very common in California and in the neighbourhood of San Francisco, where country picnics and excursions are a popular form of dissipation, it causes much inconvenience and fright. On some constitutions the effect is very severe, though we have never heard of a case that has had a fatal ending. Innocent excursionists often unwittingly decorate themselves with this pretty but baneful Sumach.]

Seminal Varieties of Trees.

EVERY year paragraphs appear in the newspapers relative to the leafing of the Oak and Ash, and the "splash" or drought that is portended, according as one or the other of those trees wins the race in the development of foliage. We are told in a note on page 459, last week, that "the Oak was the first to leaf this year, which indicates a dry hot summer and a bountiful harvest, just as in 1898." Does this imply that the leafing of the same trees was in different order in 1899? I venture to assert there was no difference between them in priority of leafage in that or any year.

I have noticed that Oak trees as a rule, and speaking generically, always develop leaves before the Ash trees do that are growing near them. But there are exceptions. Some few Ash trees always precede certain Oak trees in leafing, but this denotes nothing as to the weather that will follow, but is simply a question of variety or seedling variation. Trees of both genera that are raised from seeds differ in stature and contour, as well as in precocity in leafage. It is precisely the same with Horse Chestnuts.

I can every day see a splendid avenue of the last named trees—some hundreds of them; and very beautiful most of these trees have been during the past three weeks, but not all. Though they were taken from the same seed bed, and were of exactly the same size when planted, they differ strikingly now, both in size, shape, and the character of their flowers, while some always have developed, and always will develop, leaves sooner than the others, simply because some are in their nature early and others late. For half a century a particular Ash tree has been noted as the latest in leafing of all trees in a large parish, while a particular Chestnut is far in advance of all its congeners in assuming its spring and early summer garb.

An avenue of Lime trees, no doubt raised from seeds, is most uneven, and altogether disappointing, while another avenue from grafted trees is entirely uniform and beautiful. The variations in Ash and Oak trees, are not, as a rule, so markedly diverse, yet the differences are plain enough, some being naturally late and others early in leafing. An early Ash precedes a late Oak, but the overwhelming majority of the Ash trees are the later year by year. So much for the Oak and the Ash and the splash. That the early or late leafage of one or the other of those trees is just a case of seminal variation is the opinion of—A NORTHERN GARDENER.

OLD traditions die hard. I had thought the old story about the Oak and the Ash leafing was about dead, but I see it is still lively. I should like to ask of any close observer of nature if they ever saw the common Ash in leaf before the common Oak. The old quatrain begins "when the Oak's before the Ash." There is great virtue in that "when," just as we often find in an "if." I have observed these trees closely for many years, and have found the Ash to precede the Oak in leafing. That being so, is it worth while to prognosticate the nature of the weather? because that has happened which always happens, let the season be a wet or dry one. Some Ash trees are earlier than others, as some Oaks are, but in the Ash florescence is early and prominent, and may often be taken for leafage by partial observers.—OBSERVER.

A New Kew.

REMEMBERING how during the discussion which has recently arisen over the proposed new Chiswick, the exceeding salubrity, healthfulness, and beauty of Kew Gardens has been quoted, I was a good deal surprised when an influential municipal friend here in conversation the other day mentioned a conversation he had had with a very high municipal person of Richmond, who intimated that because of the difficulty experienced in growing certain things at Kew it was contemplated to remove the gardens to a less populated district. I fear I smiled over that intimation, for it would need all the queen's horses and all the queen's men to take Kew as it is to pieces, carry it twenty miles into the country, and put it together again. Still farther, I had not heard of those distressing conditions of culture existing at Kew, of which there has been so much reason to complain in smoke-ridden Chiswick. Possibly the Richmond official was labouring under an attack of Kew fever, which had distorted objects so much.

But what was a respected contemporary driving at last week when he said, "Kew was thirsty, and at the present rate of things the gardens were likely to suffer as they did last summer from 'draught.'" No doubt we have here a nice printer's error, the unfortunate "comp." at the moment being in a draught, or perhaps being "drought" wanted a "draught." I hope no one has any hard things to say of Kew, because it had suffered so far this season from lack of rain, but some persons may gladly seize on the suggestion conveyed that not only is Chiswick, through excess of drainage being soil dried, but that Kew Gardens is sharing the same fate. Must even the gardens authorities, as they look upon the flowing Thames, yet exclaim, "Water, water in plenty, yet not a drop for our lawns and trees!" Surely it is not quite so bad as that.—KINGSTON.

A National Victoria Rose Day.

I do not see the least reason for concern that we have few Roses to wear on St. George's Day. What have English people to do with a personage who may or may not have existed, and concerning whom those who profess to know do not write in complimentary terms? Let us bury such personages in proper oblivion. It was I who, in one of our Surrey papers, made the proposal that if England wanted a national Rose day, it should be on June 28th, the anniversary of the Queen's coronation. That was written in answer to a local complaint, that Roses could not be had on April 23rd. Well, it is folly, of course, to be proposing flower days at seasons when flowers cannot be had. Primrose people were wise in selecting a flower for their purpose on April 19th, that was everywhere in season and abundant.

If we really want a national Rose day, common sense tells us to select a day when Roses are plentiful. To suggest as a Rose day a date when only wealthy people can purchase flowers is ridiculous. On June 28th we are in the very thick of the Rose season, when everybody can have, and if they like, wear a flower, and if the day be known as the "Victoria Rose Day," in honour of the Queen, and of her wondrous reign, it would probably endure. That English people are lacking in the needful emotional feeling to make them enthusiastic over a proposal of this kind I am aware. They like Saint Barleycorn better than all the Saints of the Calendar, and King Gold they love to distraction, whilst all other kings and queens have from them very temporary admiration. Whilst I should like to see a national Rose day, and everybody wearing a flower on June 28th, I have little anticipation that it will be generally respected. When Britons declare with somewhat isolated bumpiness that they are not as other nations are, one can but regret that in many respects it is true. We have not all the virtues.—A. D.

New and Rare Plants.

THE numbers of new or rare plants, and of those that have been to all intents and purposes lost from the view of general cultivators, and which have been brought before the Floral Committee of the Royal Horticultural Society of late years, are very considerable. Bearing this fact in mind, and further having regard to the great educational value of the society's fortnightly meetings, it strikes me as deplorable that the practice of giving all possible information respecting the plants shown should have fallen into disuse. There was a time when a grower sent with his plant every item he knew that dealt with its history and parentage, and these facts proved of the utmost value from an educational point of view to the visiting public. When one sees at a show a plant, on the table set apart for the rarities, that particularly excites one's admiration, one naturally wants to have all the procurable information respecting it. This is provided in the most readily available form on cards attached to the individual exhibits.

As an example of my meaning, I may mention *Schizanthus Wisetonensis*, which was exhibited at the Temple Show. Notwithstanding the fact that it was entered for special recognition, and in fact received an award of merit, so far as I could ascertain not an iota of information was forthcoming for the edification of the committee. From my point of view this was one of the finest plants in the entire exhibition,

and I sought diligently for particulars, but beyond the palpable fact that it was a *Schizanthus*, nothing could be gleaned.

Cannot something be done to remedy this state of affairs? It is clearly against the wishes of the Royal Horticultural Society, for we find on page 50 of the society's "Arrangements" for the current year, the following:—"The name of the fruit, flower, plant, or vegetable, and in the case of seedlings particulars of parentage and date of raising, should be given if possible. If an importation the name of its native country should be added. Exhibitors are invited to communicate, *in writing*, such further details of the origin, history, introduction, or peculiarities of their exhibits as they may think interesting. . . ."

I venture to think that almost the whole of the information sought in the above notes could be provided in many cases, and I think that all readers of the *Journal of Horticulture* will be at one with me when I assert that the interest of the exhibits would be increased fiftyfold by its being inscribed on cards attached to each exhibit. I should, however, like to read the opinions of other frequenters of the R.H.S. meetings on the subject. I may say that my remarks have particular reference to the exhibits placed before the Floral Committee; both the Orchid and the Fruit and Vegetable Committees are far better served in this particular respect.—F. J. B.

The Royal Horticultural Society—Looking Both Ways.

"SCRUTATOR," on page 460, has some significant remarks as affecting the present status and the future prospects of the Royal Horticultural Society. He traces the present prosperity of the society and its ever growing strength and influence to the policy of the council. It would be difficult to attribute it to anything else. What has been the policy so steadily pursued? It has been one having for its objects the advancement and exemplification of horticulture in its different phases; or in other words, a true gardening policy, adopted and pursued as far and as well as its means allowed.

This, as many, or most, old friends of the society well know, has not always been the case. There has been at least one deplorable departure from a sound line of action. This was known as the South Kensington policy—a policy of gewgaws and glitters that brought the once prosperous society to the dust. It was against such policy that the late Dr. Hogg and other good men and true fought so strenuously; and after the crash came sought with assiduous effort to rehabilitate the old society again. Others followed with the same commendable object in view, and the present flourishing state of the society shows with what success.

Is it to be supposed that the present directorate, under whose management the society has made such gratifying progress, would take any steps in the least likely to jeopardise its fame and bring about their own ignominy? The idea is preposterous. The council, as a body, is essentially conservative—too much so, some people have thought—and the last men that could be thought of to indulge in any fanciful or sentimental speculation. They are practical business men, and do not act without serious thought and anxious deliberation. Having, as "Scrutator" suggests, the worst national garden in Europe, they evidently consider the time has arrived for providing a garden worthy of the kingdom, and with the time have come the means for carrying out the object.

This policy—this truly horticultural policy—is opposed, the lead not being taken by horticulturists as a body, but in its more active form by scientists. They want no new garden for the exemplification of horticulture, but denounce its cost while advocating the erection of a grand hall in London that would cost about ten times more than a garden, the hall to be occupied once a fortnight, and bring practically nothing in commensurate with the outlay involved.

Is history going to repeat itself, and the welfare, or even existence, of the society risked in pursuance of a London show policy, in contradistinction to a policy of national scientific and practical horticulture? The Temple Shows are successful because they occur just once a year. With many shows of magnitude the fickle public appetite would pall, interest slacken, the shows dwindle, as they did—first at Chiswick, then at South Kensington, and later in the Regent's Park. What, then, would be the society's asset? Just a grandiloquent hall—a costly white elephant.

The best gardening in Europe and the finest of gardens are found in Great Britain. The love and the practice of gardening is spreading far and wide. The Royal Horticultural Society is perhaps the foremost of its kind in the world. It and the great gardening community are as much entitled to a garden worthy of themselves and the country, for the practical demonstration of true horticulture in its varied phases and useful aspects, as the botanical part of the community is entitled to the grand establishment of Kew. We are all proud of Kew, and wish to see it flourish. No one grudges its cost, though great; and it would lose none of its characteristics and charms by the establishment of a great national garden and school of industrial and commercial horticulture, that would command support and benefit the nation. Why should not this be provided? Turn out a council willing and able to provide it, in favour of a London policy, and what then? A mere London local society, with a life worth perhaps ten years' purchase, or a return to the conflicts of the past.—AN OLD FELLOW.

St. Fagan's Castle.

A Foreword.

FOR upwards of half a century the pages of the *Journal of Horticulture* have been adorned at frequent intervals with illustrations of the various beautiful estates in different parts of the country; but so far as the present writer can ascertain, the gardens and grounds of St. Fagan's Castle have received no recognition. This must perforce be ascribed to the remissness of contributors in that corner of South Wales, as in variety of interest, from a gardening point of view, it is one of the richest in the entire principality. There are others of broader acres, which contain features that St. Fagan's has not; but this does not alter the fact that its omission from the *Journal* pages is a dereliction of duty that cannot be put right too soon. It is not a place of modern creation, but counts its history by hundreds of years, as the architecture of the mansion—it can scarcely be termed a castle—amply demonstrates. It is, as may be seen in the illustration (fig. 130) of Elizabethan character, and has grand old stone walls with mock embrasures, that may or may not have seen actual warfare. It is said that one of the last serious battles of the Cromwellian era was fought within sight of St. Fagan's—in fact, that the Royalist officers made their headquarters at the castle ere they succumbed to or escaped from the doughty Roundheads. But while so much of historical tradition clusters round St. Fagan's, it has also a present day interest attaching to it, for Lord and Lady Windsor take a keen delight in horticulture. Both are in a sense enthusiasts, and favour any scheme that contains promise of enhancing the beauty of their estate.

The Dutch Garden.

To all intents and purposes the expression Dutch garden spells formality. The mind instinctively associates with it the dwarf clipped hedges, the orthodox shrubs, and, though perhaps inclining rather to the Italianesque, the statuary. There are all these at St. Fagan's, and more, for here steps in the influence of Lady Windsor, whose predilections do not lie with the customary bedding plants. Instead therefore of the "Geraniums," the *Calceolarias*, and similar things, we find those of a freer habit of growth, and which produce, generally speaking, fragrant flowers during the months of July, August, and September. Stocks are particularly in request, and one can easily imagine what a delightful picture is made by the many branched plants producing spikes of sweet scented crimson, purple, white, and scarlet flowers. These, while retaining an element of shapeliness, have not the geometrical precision of growth that characterises the habit of the plants customarily employed in such positions. The clipped shrubs observable in the illustration, and the small amount of statuary, justify the retention of the title of the Dutch garden.

The Mulberry Grove.

In the left foreground of the same picture may be seen a number of trees the majority of which are Mulberries. These give an air of antiquity to this home garden, for the older specimens must have passed the summers and winters of more than 300 years. They spread their great branches and growths over a considerable area of ground, and yearly bring forth an abundance of the much appreciated fruits. To many visitors this small garden would be one of the most interesting on the estate. All the trees are not of one age, several being much younger, they having been planted with a view to forming a veritable Mulberry grove. One might almost weave a story on the lines of "Looking Forward," and speculate therein as to what the Castle of St. Fagan's will be like when these youngsters bear the impress of a century's hand, and what might then be the tale that the trees could tell! Here again on the right we see the square beds for summer flowers. Between the beds just mentioned and the wall is a broad border of herbaceous plants, there being another one also running by the side of the only other wall; they contain the stock customarily placed in such positions, preference being given to those that flower in the summer and autumn.

The Pleasaunce.

Let the reader now accompany us to that most delightful part of an estate in the spring time—namely, the Pleasaunce. To reach it from the gardens through which we have just passed, we must descend the terraces, cross the lakes at the most convenient spot and ascend the slopes on the other side. But when the soft grass of the level walk on the ridge is reached, a more charming picture could not easily be imagined. On one hand we find a row of splendid Cedars (*Cedrus deodara*), with miscellaneous foliage and flowering shrubs on the other.

The water in the valley, the terraces beyond, crowned on the highest ground by the mansion of St. Fagan's—as a matter of fact, and digressing for a moment from our immediate topic, it is from this position that the only semblance of a castle can be seen in the form of one tower—make a most charming picture, which receives the admiration of every visitor. The Lilacs diffused a refreshing perfume, and the Daisy-speckled turf seemed to invigorate the muscles of the wanderer within the gates. As the length of the walk is traversed we see at intervals the boundaries of the maze (in which the hapless stranger, as was the writer, may be escorted and left to fathom its mysteries as best he can), an Azalea garden, occasional groups of Rhododendrons, handsome Magnolias, with their chalice-shaped flowers, and the Snowdrop Tree (*Halesia tetraptera*), with, as the ground again falls, Apple trees in numbers, and more beautiful still, Quinces in the lower grounds. We cannot

(*Colchicum autumnale*), with thousands of Narcissi, of which only *N. poeticus recurvus* remained to tell the story of past glories. Did we descend to the narrow stream which winds slowly through the valley, we should have to discourse of Marsh Marigolds, *Iris Kämpferi* and scores of other plants grown either for their flowers or their handsome leafage, but to separate which from their picturesque confusion would be to obtain precision at the expense of art.

The Terraces.

As may readily be seen by reference to the illustration (fig. 128, page 477), the ground on the opposite side to the pleasure rises from the lake in a series of terraces, supported by walls and balustrades of stone with flights of steps. To some of these there are grass banks with shrubs of various kinds, and on the upper one a broad border with

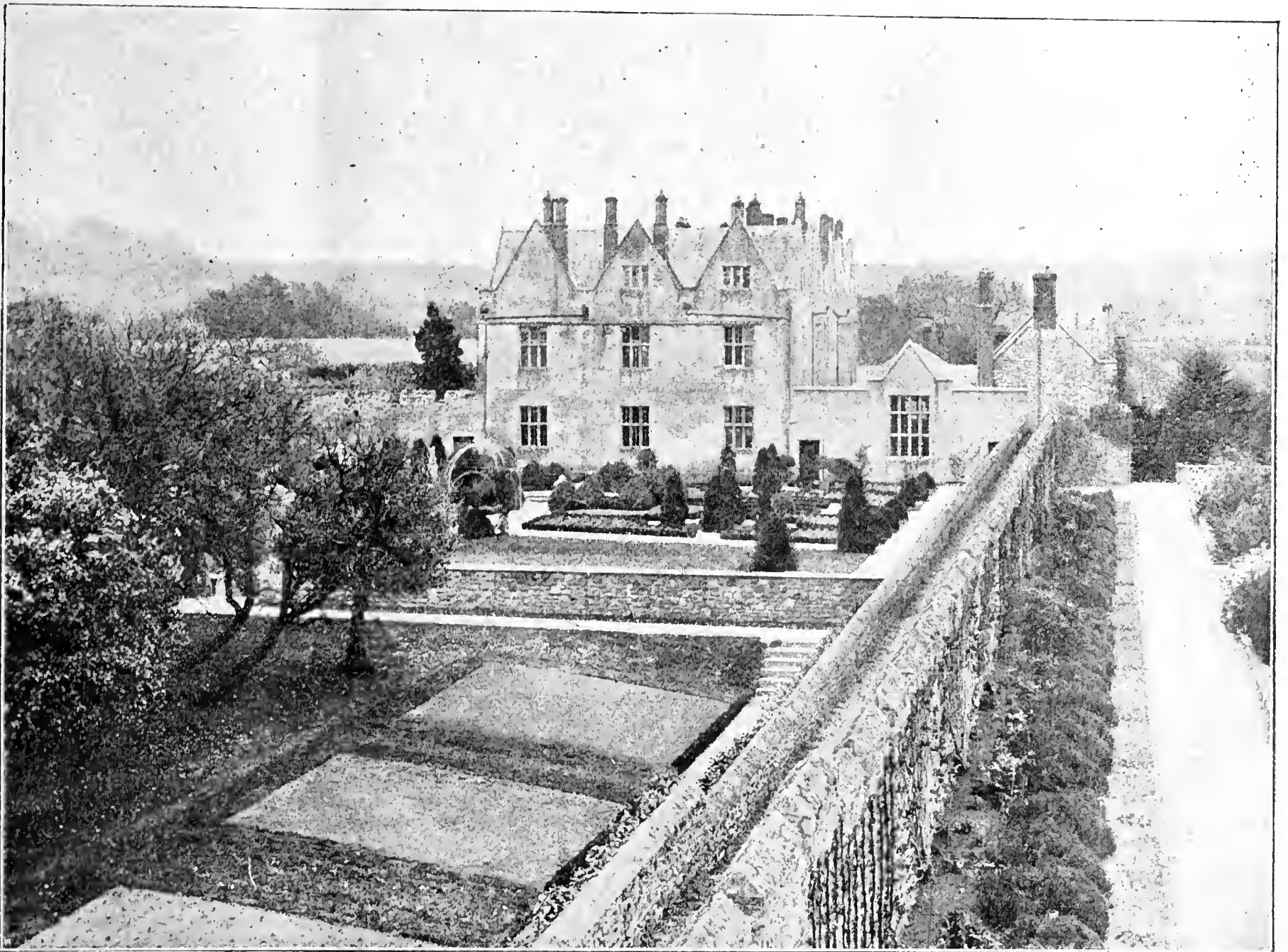


Photo by Mr. G. R. King,

Cardiff.

FIG. 130.—ST. FAGAN'S CASTLE.

make a pretence of indicating the evergreen and deciduous trees or these notes would become literally a list of names which could not prove very entertaining reading.

Grass Gardening

Though to all intents and purposes this forms an essential portion of the pleasure, it is sufficiently attractive to warrant a separate paragraph. It is a phase of gardening that must be encouraged, and it is a pleasure to see the intelligent interest that is taken in it at St. Fagan's. Mr. Hugh Pettigrew, the gardener in chief, does not enter upon his work in an indiscriminate manner as is demonstrated by the admirable way in which positions have been chosen for the various plants. For example, in one place we found ourselves in a veritable Primrose garden (though only a solitary flower was then visible); while in another position equally appropriate rose the tall spikes of *Camassia esculenta*. Again, there were Snowdrops, Scillas, autumn Crocuses

a row extending the whole length of splendid Lavender plants. These must make a most beautiful picture when, later in the year, they are in full bloom, and one can imagine the delicious fragrance that will rise from them to the mansion, the Dutch garden, and the Mulberry grove above. On some of the spaces on the banks plants of the Florentine Iris are flowering; while in other positions the lovely *Rosa Wichuriana* has been judiciously planted. This Rose has an enviable reputation in America, and one may reasonably suppose that it will luxuriate in the positions selected for it at St. Fagan's. *Rosa rugosa*, handsome alike in foliage, flower, and fruit, has been similarly employed, and in still another place on the slopes it is proposed to plant a Sweet Brier hodge. One observes here and there, both in the pleasure and in other portions of the grounds, comfortable seats on which visitors may rest, and appreciate at their leisure the beauty and fragrance with which they are surrounded. In the lakes, which it will be observed are formal in design, Water Lilies flourish, and these again add interest to the whole.

The Rosery.

The reader may gather from the foregoing remarks that the whole of the gardens and grounds at St. Fagan's bear the impress of antiquity; but this is in reality by no means the case. There are modern features that will improve under time's softening hand, and there are places where the new and the old are associated in pleasing harmony. Look, for example, at the Rose garden, which will in a few years become one of the pleasantest retreats on the estate. Only a short time ago the space enclosed by substantial stone walls was a rubbish heap, whereas now it forms the garden for the queen of flowers. In shape it is oblong, and in each corner we find large beds given up to different sections as well as varieties of Roses, while on the walls are some of the best climbing Roses that could be procured. These corner pieces are divided from the other beds by soft green turf, and the centre is occupied by a cone-shaped arbour, over which other climbers in addition to Roses are being trained. This erection, beyond its margin of grass, is surrounded by trellises on which Roses may ramble practically at will. Outside of this, again, is found a red brick trough about 30 inches wide and half as many in depth; water is admitted at different points, and it is proposed to have some of the choice smaller-growing Water Lilies placed therein; needless to say it will be stocked with fish at the first opportunity. The whole of the soil utilised in the formation of this garden has had to be carted in, and from its appearance we should infer that it would have been difficult to select any more suitable for the purpose.

Wall Gardening.

Mention is made in the preceding paragraph of the association of the old with the new, which result has been achieved by the aid of wall gardening. The grand old stone walls that abound on the estate are admirably adapted to this form of gardening, and Mr. Pettigrew purposes to make a distinct feature of it in the future. It is so peculiarly interesting that it is really a matter for surprise that it has not been more frequently attempted. Possibly its neglect may be ascribed to the fact that generally speaking the plants suitable for the purpose are not showy, but are of such beauty as only the most refined taste can appreciate and enjoy. Of course, we frequently see Wall-flowers and Antirrhinums, but beyond these there are scores of smaller growing plants that are available for the purpose. However, the establishment of a wall garden is essentially a question of time, and can hardly be placed on a level with the planting of a flower bed or the making of a Rose garden.

The Fisheries.

In all probability the title of this paragraph will, if only for a moment, recall to the minds of readers the great International Fisheries Exhibition that was held at South Kensington in 1883. There was on view, as the writer can well remember, an immense variety of things of interest connected with fisheries and allied pursuits. The fisheries at St. Fagan's aspire to no such universal glory, but they are, at the same time, of the greatest interest. As a matter of fact they consist of three trays or troughs, in which trout of two or three varieties are being raised for stocking the lakes and presumably the watercourse in the Rose garden. In the three watertight boxes at St. Fagan's there were quite fifteen hundred trout, varying in size from an inch to an inch and a half in length. A constant flow of fresh water is apparently the great desideratum, and this falls from the upper box to the centre one, whence it passes through the third, and escapes by the overflow; the depth of water maintained would be some 3 or 4 inches. The series of boxes is placed on a stand under a high wall, and is further shaded by overhanging trees; the locked lids are seldom raised when the sun is striking directly on to the water, and then only for a very short time. The youngsters are fed once a day on hard boiled egg rubbed through fine gauze, and they take it with avidity. Beyond the constant supply of moving water the points are cleanliness and the prompt removal of any fish that may, from some known or unknown cause, die. In any case the process is most interesting, and is so simple that anyone might undertake it.

Beauty versus Utility.

When Mr. Pettigrew first took over the charge of the gardens at St. Fagan's he found in immediate contiguity to the mansion Strawberries growing on a bank, and near his own house the ground given over to vegetables. He further learnt that his noble employers were flower lovers first and vegetable lovers afterwards. Thus utility had to give way to beauty, and the bank is now occupied with thousands of

flowering plants, and the vegetable quarters are divided into beds of Gladioli, Sweet Peas, Carnations, Phloxes, and Pentstemons; while in the adjacent garden, which was erstwhile given up to Roses, are magnificent Paeonies, and many other plants that will provide flowers for cutting. These are in very great demand, and the provision of beds in such positions as those described obviates the necessity of drawing from the beds and borders near the mansion to maintain the supply. Utilitarianism is not put aside entirely, for there are considerable numbers of fruit trees on the walls with bushes and standards of various kinds in suitable positions all in fine condition; while under glass we find Tomatoes and excellent Grapes. There are, too, the plant houses, but St. Fagan's is to all intents and purposes an outdoor place, and in that section lie its many striking beauties. With the occupation by flowers of the entire home garden, it became necessary to find a new place for the vegetables, which were eventually relegated to a field some distance away. This has been laid out and planted with various fruit trees, and is now becoming stocked with vegetables; many crops are of course well advanced, and others are being rapidly brought forward until in a short time all the space at disposal will be occupied. Even here beauty is combined with utility, for a few rows of Sweet Peas were observed growing well; but then Mr. Pettigrew is a member of the General Committee of the Sweet Pea Bicentenary Celebration, and as such should support the flower of the year.

An Afterword.

The afterword, or postscript, of a lady's letter is said to contain the gist of all that has preceded it, but no such claim can be made for the afterword to St. Fagan's. That more might be said is readily acknowledged, but for a writer to absolutely exhaust his subject in one article is so contrary to the tenets of journalism, that something must ever be left unsaid. Thus an excuse remains for further reference to these beautiful gardens, which are so cherished by Lord and Lady Windsor, and admired by all their visitors. One reference only to the charming village can be made, and that is simply that the main entrance to the castle from the main street passes through an avenue of Robinias, with some handsome Cedars of Lebanon spreading their arms on the right background. With Mr. Hugh Pettigrew and St. Fagan's we have done for the present, but there are others of that ilk in the neighbourhood of whom something must be told in the days that are to come.—ZINGARI.

The Temple Show.

I HAVE read with interest both your report of the Temple Show and "Scrutator's" comments thereon on page 460 of your last issue. I found the crush in the tents during the afternoon of the first day very uncomfortable, and wish some scheme could be devised that would facilitate the examination of exhibits and locomotion. It was practically impossible for anyone to adequately inspect all the exhibits, though I have heard of one remarkably clever individual who "saw the entire show in an hour."

I am writing now to state how much my views coincide with those of "Scrutator" relative to the size of the collections. It seems to me quite unnecessary for such immense collections of Begonias, Calceolarias, Gloxinias, and other similar plants to be shown, as we all are familiar with the general run of the varieties, and have a keen desire to see only the choicest of the choice when we go to the Temple. I should therefore support your correspondent's suggestion most heartily relative to the limiting of the collections to say fifty plants in from 6-inch to 10-inch pots, according to the habit of the several kinds. One friend goes even further than this and advocates the appointment of a censor, who shall have power to exclude everything that does not attain to his ideal of perfection from the tents. I cannot say I have much sympathy with this project, but I should be full of sympathy for the man to whom such a task was allocated, and who would certainly come in for quite as much abuse as the press censor has done during the South African war.

"Scrutator's" scheme is certainly a workable one, and I hope the Council will bear it in mind in arranging for this great show in 1901. It would relieve the pressure on the space and would permit of the several exhibitors displaying rather more taste in arrangement than is at present apparent. There is still too much packing in the stands, and this is bad for the plants as well as the visitors who wish to inspect them carefully.—COUNTRY VISITOR.



Ficaria grandiflora.—The *Ficarias* are *Ranunculus*-like flowers, attractive in blossom, and useful from their early period of blooming. *Grandiflora* is one of the best. It produces bright yellow flowers in spring, and although easily grown and succeeding in ordinary garden soil, in deep rich ground it is much more vigorous and free-flowering. It is a plant that might well be added to many mixed borders of hardy plants, meriting a place there both by reason of its pleasing appearance and period of blooming, for flowers are not then too abundant. The opportunity may be taken of referring to another *Ficaria*—namely, *ranunculoides* fl.-pl. This is also well worthy of attention, the bright yellow double flowers being extremely attractive.—B.

Diervilla præcox.—The genus *Diervilla* (or *Weigela*) provides us with some of our most beautiful flowering shrubs, and of these *D. præcox* is the first to bloom, opening its purplish red flowers in April, and continuing well into May. The origin of this plant is not exactly known, but most probably it is an introduction from Japan, and either a geographical or garden form of the better-known *Weigela rosea*. It is not so hardy as the majority of this genus, and requires the shelter of a wall in the northern and midland counties, but it is well adapted for training, as it makes rather long, slender growths, which will produce a good truss of flowers from nearly every joint. The leaves are ovate, serrated, nearly or quite sessile, and very woolly on both sides. The whole plant, in fact, is distinctly hairy, even to the calices of the flowers.—C.

Wayside Flowers.—Among the list of wild flowers that now crowd and jostle each other by the wayside and margin of fields in Buckinghamshire, these two are most conspicuous—Starwort and Speedwell. They come in the very prime of year, when all young things are jubilant. All along the dusty highway, by the hedgerow bank, there are patches of delicious blue and snow-white. It is only in April, May, and early June that we have such a wealth of blue colours—Violet, Hyacinths, and Speedwell. As the noon of the year comes, with higher temperature and keener light, blue makes way for the golden and richer hues, the yellows, scarlets, and crimsons—the glaring Zonals, the Marigolds, Asters, and lumpish Dahlias—the adjective was Dr. Lindley's. And oh for the rain! It is so badly needed, to wash the dust from the wayside flowers and refresh the springing corn. How eagerly the little things are waiting for it, stretching out their dimpled leaves, to feel the cool sweet rain. It is falling now, in thick gentle showers, for it is these that do most good; not the thunder rain, that dashes and splashes and runs away, without refreshing the root of a Daisy.—("The Echo.")

Potato Sets.—I think Mr. Strugnell is the only grower of Potatoes of whom I have read, who adopts the practice of planting his small tubers each year, of early varieties only, to produce finer sets specially for planting the following year. If he has adopted that practice long then he should be in a good position to tell readers of the *Journal of Horticulture* how far that practice tends to deterioration of stock or how little. It is a favourite doctrine of some writers on Potatoes, and I have often wondered how much authority they may have had for it, that by planting small Potato sets instead of those of good size the stock soon deteriorated, and became much less productive. According to their theory Mr. Strugnell's stocks, if he grows the same ones for several years, should now be very inferior. But is it really so? I wish someone would, by way of experiment, test the matter with say half a dozen of varieties, early, midseason, and late, planting say of each variety a dozen tubers of 1 oz., 3 ozs., and 6 ozs. in weight, on precisely similar lines, saving the stocks, again selecting from them tubers for planting of the same sizes as before, testing the produce in the same way, and doing it a third year at least, just to see what was the general effect on the stocks. But to equalise matters, the fourth year tubers all of equal size, say from 3 to 4 ozs., should be selected from each stock or variety, and be planted again under similar conditions. The product that year should fully determine how far the successional planting of small tubers as against larger ones tended to deterioration. The matter is worthy of being put to a very practical test.—OBSERVER.

Noteworthy Asparagus.—Mr. Hurlstone writes:—"I have read your paragraph in last week's *Journal* about *Asparagus*, and as you ask the question of weight I have enclosed a cutting from the "*Worcester Times*," setting out the weights of some shown at the Evesham show this week—"Some *Asparagus* of remarkable size and excellent quality was shown, and the following prizes were awarded: Best hundred: 1st, Mr. George (Persnore), weight 22 lbs.; 2nd, Mr. Bedenham (Benge-worth), 19½ lbs.; 3rd, Mr. R. Mason (Haselor), 17 lbs. 1 oz. The prize for the heaviest hundred went to Mr. G. Bolton, whose bundle weighed no less than 28½ lbs."

Campanula Raineri.—This is a sturdy little mountaineer from northern Italy, having large, erect, somewhat funnel-shaped blossoms of a dark blue, and is a most pleasing and distinct member of its genus. It is comparatively rare in cultivation, though by no means difficult to grow or to increase, and it is somewhat surprising that it is not more generally met with. It is more vigorous in habit than any other of the dwarf Harebells, and is adapted for the border or the rockery. It is readily increased by division and also by seed. It grows best in moist situations in very sandy loam, and is usually from 3 to 6 inches high, the latter height, however, being a rarity.—H.

Notice to Thieves.—The following weird notice to thieves, states the "*Western Mail*," appears on a notice board erected at the foot of a grave at Merthyr Dovan Cemetery, Barry:—"Beware of the eye of God when no other see you, Off the evil done to these that is at rest hear by willfully stilling plants from this grave been plased hear by the parents of those near and dear to thim, which as been done 5 different times. Seven choise plants as been taken within this past five wicks, 2 choicc cornations and other roots from the 15 to the 18 of this presant muntth. Shureley the hand of God sooner or later will punish the gilty of such ungrateful act."

Arbutus hybrida.—This is a natnral hybrid between *A. Andrachn e* and *A. Unedo*, and in its characters is intermediate between its two parents. It forms a small, well-furnished tree about 20 feet high under favourable conditions, and is rather hardier than the Strawberry Tree, so that it should be a welcome addition to the list of first-class ever-greens in most gardens of the southern half of England. In point of beauty it is surpassed by few of its class, and as an isolated specimen on a lawn leaves little to be desired. It thrives best in a good deep soil free of lime, and if it is of a peaty nature so much the better. The small, tubular flowers open from February to April, and are white with a faint tinge of lemon at the mouth, and are occasionally streaked with red on the outside. They are borne in terminal, branched racemes, on every shoot, and make a fine display when the plant is in full flower. Like the other members of the genus, this plant is impatient of removal, and should be kept in pots until it can be placed in its permanent quarters, as the shifting of even small specimens cannot be done without running considerable risk of losing them altogether. It can be propagated by grafting on *A. Unedo*, or by seeds, which are produced in warm localities, and which reproduce themselves fairly true to character.—J. C.

Cineraria Culture.—As I was more than usually successful last season with these handsome flowers, I will describe briefly my methods in the hope that they may be of service to my fellow amateurs. The flower heads were fuller than I have ever seen them. I have measured scores of the blossoms, and find several fully 2½ inches in diameter, and the colours exceptionally rich. The first sowing was made April 14th, 1899, in pans half filled with rough peat, to which was added a mixture of loam and peat finely sifted, with plenty of sand. The pans were then covered with glass, and placed on the higher shelves in a cool greenhouse. As soon as the plants showed their second leaves they were potted singly into thumb pots, using rather coarse soil, but taking care not to cover the hearts of the plants. They were then placed in a close frame shaded, and sprinkled morning and evening till well established, being kept close for a couple of weeks, after which more air was given. As soon as the pots were full of roots the plants were shifted into 4½-inch pots, and again at the end of September into 8-inch pots for the largest specimens. As soon as the flower buds showed the plants were liberally supplied with soot and liquid manure. Plenty of air was given night and day when the weather was suitable, and at all stages of their growth the plants were shaded from bright sunshine. The soil employed was equal parts of rich loam, leaf mould, and thoroughly decayed horse manure, mixed with charcoal dust and coarse sand.—AMATEUR.



Rose Show Fixtures in 1900.

- June 13th (Wednesday).—York.†
 „ 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
 „ 28th (Thursday).—Canterbury, Colchester, and Isle of Wight (Ryde)
 „ 30th (Saturday).—Maidstone and Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
 „ 4th (Wednesday).—Croydon, Ealing, Farningham, Hereford, Reigate, and Tunbridge Wells.
 „ 5th (Thursday).—Bath, Norwich, and Sutton.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham.
 „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
 „ 13th (Friday).—Ulverston.
 „ 14th (Saturday).—Manchester, and New Brighton.
 „ 17th (Tuesday) Carlisle.
 „ 18th (Wednesday).—Cardiff.*
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne.†
 „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any other Rose shows (or horticultural exhibitions in which Roses form a leading feature) for the next list of Rose Show Fixtures, which will appear in an early issue.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

Ethel Brownlow.

YOUR correspondent, "Specialist" (page 446), has arrived at a wise resolution to once again try the culture of this admirable Rose—delightfully tinted salmon pink and yellow. The yellow shades to a creamy white in early spring under glass. I got this from the raisers, Messrs. Dickson, Newtownards, as far back as 1889—the year after it was sent out—and ever since it has been a persistent bloomer, nine months out of every twelve, on the back wall of my greenhouse. It does admirably when well established on a south wall, but planted out under glass it does best. A companion for it would be Muriel Grahame (Tea), but it is not so vigorous.—W. J. MURPHY, *Clonmel.*

Perle des Jardins.

THIS Tea-scented Rose is not one esteemed by exhibitors, but it is highly favoured as a market variety. The clear light yellow tint of its blooms is always admired, and their medium size adapts them for all kinds of floral decoration. It is also a continuous flowering variety; the stem is of good length and stout, besides having remarkably striking foliage, so thick as to be almost mildew-proof.

To see this Rose in full beauty it must be grown under glass. We visited several long greenhouses filled with it at Woking recently. The grower, Mr. J. Wood, has cultivated "Perle" for a considerable number of years, the flowers going to the leading London market, and with such success that we fancy he would require something very much out of the ordinary way to oust his favourite. To judge, however, from the thousands of little plants of the newer Sunrise, it would appear that this is in the future likely to obtain a large portion of this grower's care. Mr. Wood is also raising seedlings himself, and has several very promising ones. He should know what the Rose public require, for we believe he had much to do with the propagation and growth of such grand sorts as Her Majesty and Mrs. John Laing before others had a chance of trying them, with the late Mr. Bennett.

The houses of "Perle" are certainly grand. When one opens a door there is before one a level mass of Rose buds in varying stages of development. The plants are no more than 2 feet high, in bush form, and exceptionally healthy and clean. Apparently there is not a great deal of trouble taken with them; that is they are not coddled, but the proper treatment is undoubtedly bestowed upon them. The older plants look quite aged judging from their thick base, but the fresh growth is all alike in vigour. Mr. Wood raises his own plants, a few being worked each year to replace any that may have become debilitated.

Pots of several sizes are employed, up to 12-inch ones, for the

oldest specimens. All are plunged half their depth in the ground; thus they establish themselves there in time, and are not often moved. The feeding with stimulants is given in the pots when required. The glass is never shaded, and this may account in some way for the deep colour Mr. Wood gets into the blooms. Some hundreds of dozens which we saw ready for the market were certainly remarkable in their depth of yellow for the variety.

A new nursery has been started by this cultivator near Ash, in this county. Here, although *Perle des Jardins* reigns supreme, other sorts are given a trial. *Kaiserin Augusta Victoria* is a white flower very much favoured, and the thousands of plants outside of Fisher Holmes would indicate that this is a good crimson sort to supply blooms throughout the summer.—SURREY.

Climbing Roses.

ONE of the best methods of growing Roses is to cultivate them as climbers. Many excellent positions are to be found round the walls of mansions, gable ends of buildings, trellised walls, pillars, and arches, where Roses would flourish well and form picturesque additions to the surroundings. This is not the proper season to plant Roses, except from pots, but it is an appropriate time to draw attention to the wealth of suitable varieties in the various sections of Roses which are unmistakeably adapted for this form of culture.

Ayrshire Roses are best for covering rough work, arches, pillars, and tree trunks. They grow rapidly, the habit of the plants being slender with trailing stems. The leaves are shining, and the flowers are borne in clusters. *Dundee Rambler* is one of the best varieties. *Ruga* is very fragrant, of a pale flesh colour, and splends, of the same colour as the first named, white, tinged with pink, is myrrh-scented. The evergreen Roses are of similar rapid growth to the foregoing, and, as their name implies, retain the foliage far into the winter. They are well adapted for furnishing rough spaces, fences, walls, and bear immense clusters of bloom. *Félicité Perpetué* has cream white flowers. *Rampant* pure white, and *Fortune's Yellow* copper and fawn, are singularly beautiful.

The Cluster Roses are distinguished by bearing immense corymbs of rich-coloured blooms. They have fine foliage and a vigorous habit. *Fragrans*, bright rose, *Laura Davoust*, rose, *purpurea*, purple red, and *Claire Jacquier*, creamy yellow, are the best varieties. In the *Polyantha* Cluster Rose class there is one variety which has of late years taken a high position as an excellent climbing or pillar Rose. This is *Turner's Crimson Rambler*, crimson scarlet. *Boursault* Roses are very distinct and handsome, grow rapidly, and bear strikingly gorgeous blooms in large clusters. *Amadis*, crimson, *Blush*, pale pink, and *elegans*, purple, white stripe, are good varieties. *Prairie* Roses are robust, vigorous climbers, especially on a south or west aspect. *Baltimore Belle*, white, shaded pink, is an excellent variety. In the *Bourbon* class a fine representative variety of a rich dark red colour is *Madame Isaac Pereire*; *Acidalie*, blush white, and *Sir Joseph Paxton*, lilac crimson, are both excellent.

Banksian Roses rank among the best climbers for walls, as they prefer a warm sheltered position. They flower early, making vigorous growth. The bloom is produced in clusters on the laterals from the previous year's shoots. *White Banksian* is very fragrant. The colour is a creamy shade of yellow. *Jaune Serin*, bright yellow, produces the largest blooms. *Musk* Roses are vigorous in growth, and are very suitable for making a display in autumn, at which time they bloom in profusion. Walls with a south-west aspect will suit them better than other positions. The blooms are deliciously fragrant. *Princess de Nassau*, cream, and *Rivers' Musk*, cream white, are good. The *Macartney* Roses, which include a single white named *alba simplex*, with shining foliage, *Maria Leonida*, double white, almost evergreen, are, like *Musk* Roses, best grown a warm wall. They are autumnal blooming.

Noisette Roses belonging to the strong growing section are specially adapted for walls on a south aspect. Among the best varieties are *L'Idéal*, yellow, red streaks, finely scented; *Lamarque*, a free grower, pure white, shaded lemon blooms. *Alister Stella Gray* is specially good; flowers similar to *W. A. Richardson*, produced almost continually in clusters. *Aimee Vibert* also blooms in clusters, the flowers being pure white. The best large white *Noisette* is *Madame Alf. Carrière*, ivory white, a good climber. *Maréchal Niel* should be tried in a good position. The blooms are bright yellow. It is one of the finest climbers grown, but will not succeed everywhere outdoors. *Triomphe de Rennes* is a free grower with yellow blooms.

Tea Roses possess many excellent varieties which only show their true character as climbers. They should have the protection of a wall and be planted in good soil. *Gloire de Dijon* will succeed on any aspect, and may be freely planted on walls, pillars, and trellises. It blooms early and late, and is very sweetly scented. The colour is fawn or buff with an orange centre. *Cheshunt Hybrid* is a good, hardy climbing Rose, vigorous in growth, with blooms of a cherry carmine colour. *Climbing Niphetos* is white, *Climbing Devoniensis* also white, and a free grower. *Madame Berard* is a clear salmon rose, and *Perle*

des Jardins yellow. Of the latter there is a climbing and a non-climbing variety. The climber is a rampant form of the dwarf type. Reine Marie Henriette should be grown in company with Gloire de Dijon, as it is almost a red form of the latter, and is a free climber.

Hybrid Perpetuals do not include a large number of climbers, but some varieties are well adapted for wall and fence culture. Among them may be included Jules Margottin, carmine; Glory of Waltham, crimson; Charles Lefebvre, velvety crimson; Blair No. 2, rosy blush; and Victor Verdier, cherry red.

Single Roses make splendid climbers if such varieties as Paul's Carmine Pillar and Single White are planted. Good positions might be afforded them by the sides of walks, training the growths on wire arches.—ROSARIAN.

Diseased Tomato Plants.

No. 1 plant, with marks of black on the stem and also the fruit, is infested in the root-stem with root-stem eelworm (*Tylenchus obtusus*), but the infection in the leaves and fruit is not sufficiently developed to admit of identification. It appears, however, to be what is called "spot," or "black stripe." The eelworm has almost destroyed the bark and soft-tissues portion of the root-stem, and the plant would soon have been destroyed, though its existence might have been prolonged—probably sufficiently long to ripen the fruit—by earthing it up, so as to secure fresh supporting roots from the stem above ground. No. 2 plant, that began to flag and wither without any apparent cause, is affected with "sleepy" disease fungus (*Fusarium lycopersici*), the woody tissues being quite browned by the parasite, and this not only in the root-stem, but a considerable distance up the stem above ground. Thus, with the supplies of nourishment cut off—for the fungal hyphæ destroy the tissues or conduits of the sap—the plant, as soon as girdled internally, must wither and die. The placing of turf round the stems of a few plants that suffered similarly, and keeping plentifully watered, with the result that they have mostly recovered, is very interesting and instructive.

The leaf from a plant of Challenger simply implies a disguising of the chlorophyll or green colouring pigment, the white overpowering the chlorophyll granules, and is a sort of parasitism, inasmuch as the white lives or forms at the expense of the green. It is probably due to the excessive formation of some oxalate, probably that of lime, the incrustation on the dead portion of the leaflets being certainly of a calcic or lime nature. The case resembles that of white variegation or complete albino, as in white Celery. Perhaps a little nitrate of ammonium, unfortunately too expensive for general use, would probably change the colour, giving the chlorophyll granules sufficient energy to overpower the blanching element or elements.

For the eelworm and also for the sleepy disease there are no better preventives than lime and kainit. As a particular preventive and nutrient for the Tomato, Mr. W. Dyke applied 2 lbs. of basic slag phosphate and 12 ozs. of kainit per square yard, and mixed this dressing with the soil about a foot deep in the early winter and left it until the following spring or planting time for the Tomato plants, the border being previously turned over a spit deep. He reported good success in the *Journal of Horticulture* from the treatment, though not quite absolute freedom from "sleepy" disease. As the basic slag is nearly half free lime, and this acts on the organic matter upon which sleepy disease exists as a saprophyte, and then passes to semi or complete parasitic state, the treatment is only a modification of what we have frequently advised. This is effected as follows:—Apply 1 lb. per square yard of freshly burned best chalk lime, slaked with the smallest quantity of water to cause it to fall into a fine powder, then spread evenly and dig in with a fork, taking small spits so as to insure an even mixing of the lime with the soil about a foot deep. On the level surface distribute 8 ozs. of best quality kainit, and leave to dissolve and pass into the soil. The quantity of kainit as proposed for a square yard and the liming and the salting should be performed some time in advance of cropping, at least six weeks, and preferably double that time. Dig the ground with a fork, and taking small spits at the middle of the period.

Cornus Mas.—Though an old-fashioned plant this is not seen as often as it might be, considering its value as an early spring-flowering shrub and the ease with which it can be grown. No matter whether the soil be sandy or clayey, this plant seems to thrive and flower freely every season. It commences to bloom about the middle of February and continues to the end of March, making a pleasing display with its clusters of bright yellow flowers, which are borne in bunches of from twenty to thirty enclosed in four rounded bracts. In good seasons the flowers are followed by the pendulous red fruits. There is a good white variegated form of this plant which fruits even better than the type, and grows quite as freely. C. Mas can easily be propagated by seeds, which germinate readily and soon form good plants. The variegated form must be either raised from cuttings or by grafting on the type.—C.

A Spring Garden.

No season of the year is so full of beauty as the spring, and at no other season do we enjoy such a wealth of floral variety. When we look back, thinking of the days that are no more, and consider all that they have taken from us, and how life has altered, yet with each returning spring we feel the lasting truth of the poet Keats' sentiment, "A thing of beauty is a joy for ever." Such is the garden, such the face of Nature at this season. It may be some picturesque piece of landscape, some wayside cottage garden, some noble tree or shrub, we have long known, and whose beauty is still here cheering us! Nevertheless, despite this wealth and profusion of loveliness, our gardens are often lacking in hardy flowering or ornamental shrubs and hardy spring flowers. I will therefore endeavour to draw a picture of an old-fashioned manor house in the county of broad acres as its beauties were revealed to me in the month of May.

The southern, eastern, and western grey stone walls, which date back to Tudor times, were clothed with climbing plants, while the northern front was garbed in Ivy. These are some of the flowers of May that greeted me on the occasion of my visit. Clematis montana festooned in white starry flowers rambled about the entrance porch, Wistaria sinensis hung luxuriant and showing its pale blue chains, Choisya ternata bowed with fragrant flowers, while the quaint catkins of Garrya elliptica lent an additional attractiveness. A touch of golden colour was added by the flowers of Kerria japonica flore pleno, the leafage of the variegated Euonymus japonicus, and the Golden Ivy. On the western gable Prunus triloba fl.-pl. garlanded with soft blush pink, and the white P. sinensis fl.-pl. displayed their loveliness; here and there the grey stone was allowed to show its neutral tint to give variety.

A few simple flower beds in a sheltered corner of the lawn made a charming picture, before which many a garden belonging to our stately homes would pale. The central bed, 7 feet in diameter, had a cluster of primrose Wallflower in the centre, around which in panels, separated by the yellow leaved Lamium, were Alyssum saxatile, Aubrietia Leichtlini, and Myosotis dissitiflora. Two narrow scroll-shaped beds were each filled with blood-red Wallflowers, bordered with white double Daisies; while two other scrolls contained double white Rockets, edged with red double Daisies.

The grounds, though only a few acres in extent, were full of interest at almost any time of the year. A belt of Austrian Pines sheltered them on the north and east, while an Ivy clad wall divided them from the main road on the west. On the southern side the lawn was separated from the park by a sunk fence, and bordered on the outskirts by clumps and single specimens of flowering shrubs. Here a noble Cedar of Lebanon spread out its mighty arms. There the flowering shrubs included a bush, 6 or 7 feet in height and as much in diameter, of Pyrus (Cydonia) japonica umbilicata, which was a glorious sight with its pendulous shoots clothed in rosy scarlet flowers. Cydonia alba and the type were grown as unpruned bushes, and whoever saw them grown thus would not train them against a wall and spur them in as is frequently done. The dwarf-growing C. Maulei was represented by a clump of three plants, whose branches were wreathed with orange-scarlet flowers; while the large white cup-shaped flowers of a fine plant of Magnolia conspicua bulked prominently on the view.

Several Japanese Maples, though not large, gave a rich glow of colour; they were Acer polymorphum, A. polymorphum atropurpureum, and A. palmatum sanguineum. Here a clump of Rhododendron Cunningham's Blush did not belie its name; there were several fine specimens in cool places of Azalea pontica and the Ghent varieties. A small bed of A. mollis looked charming with its rich and glowing colours, and a small group of the feathery-leaved scarlet Elder (Sambucus racemosa plumosa aurea) glowed beautifully in the lemon yellow of its lacinated foliage, blended with the orange colour of the emerging leaves of the crown.

Passing to the northern side of the house, where, after leaving the walk, the ground rose rather abruptly. Advantage of this had been taken to form a rockwork from the gravel walk to a height of 12 feet. This rockwork had been formed by large square slabs of rough stone sunk a foot into the soil, and made a step-like series of receptacles a yard in width, and having sufficient depth of soil to allow shrubs to flourish. This rockwork was always full of interest, and the month of May was particularly rich in its display. Noticeable was a huge bush 5 feet in diameter and of proportionate height of Genista præcox albus literally weighed down with its snowy white racemes. Groups and single specimens of G. præcox (sulphur and yellow) were seen, as well as G. scoparia grandiflora with its golden flowers. There, too, were masses of G. tinctoria plena and Ulex europæus plenus (double Furze). Daphne Fioniana was represented by a bush 4 feet in diameter and a yard in height, every shoot bearing a truss of sweet scented flowers, while many fine-leaved Ivies rambled over the stones, mixed with the pale blue Periwinkle (Vinca major) and Euonymus radicans variegatus.

On the ground above the rockwork were masses of *Berberis Darwini*, *B. stenophylla*, and *B. dulcis*, with Lilacs, Laburnums, the Snowy Mespilus (*Amelanchier botryapium*), the Almond, *Pyrus Malus baccata*, the scarlet Siberian Crab, Japanese Crabs, and the double-flowering Cherry (*Cerasus avium multiplex*), to all which a group of *Prunus Pissardi* imparted a rich purple colour, making this bank a living picture of the changing year. Variety in the form of a heterogeneous mixture of trees, shrubs, and formality still clings to the ordinary landscape gardener; but those who love stately foliage and beautiful flowering trees will not permit confusion. Freedom of growth was practised here. Flowering shrubs had been judiciously pruned for a year or two after planting to make the foundation, and afterwards only the dead wood or crowded growth had been thinned out.—F. STREET.

Celmisia spectabilis.

This plant must be accorded a foremost position amongst the introductions of the last two decades, and though it is still comparatively rare, it is gradually gaining a place in popular esteem. *Celmisia spectabilis* (fig. 131) is a composite plant of striking beauty, and the form of its flower and the habit of growth are both shown in the illustration. The plant usually grows to a height of about 6 inches, and has narrow lanceolate leaves, which are white and woolly on the under surface. The flower heads are 2 inches in diameter, with closely set, narrow, pure white ray florets, and a golden disc. Being very compact it is well adapted for culture in pots in a cool house, or it may be found useful out of doors. If "R. T. R." requires any further information relative to this plant he must write again.

The Royal Horticultural Society.

Drill Hall, June 5th.

CONSIDERING the fact that it is holiday time, the exhibition on Tuesday was a most excellent one. Not only was there diversity in the exhibits, but also quality, which was observable throughout the entire show. The finest features of the entire exhibition were the *Eremurus* from Messrs. J. Veitch & Sons, the vegetables from Messrs. Sutton & Sons, and the two boxes of Nectarines from Messrs. T. Rivers and Son. Orchids are never very numerous at this period of the year, and quality had to take the place of quantity.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with Messrs. E. Beckett, G. Kelf, J. H. Veitch, A. H. Pearson, A. Dean, S. Mortimer, G. T. Miles, W. Bates, G. Wythes, J. Smith, G. Norman, H. Balderson, H. Somers Rivers, and H. Esling.

Messrs. Laxton Bros., Bedford, staged Strawberries Leader, Fillbasket, Mentmore, Trafalgar (Latest of All and Frogmore Late Pine), Climax (Latest of All and Waterloo), in excellent condition. Trafalgar is an attractive fruit, that will probably be shown to better advantage later in the season. Mr. E. Beckett, gardener to Lord Aldenham, Elstree, sent some splendid fruits of Lord Napier Nectarine; while Mr. J. Hudson, gardener to L. de Rothschild, Esq., Gunnersbury, contributed Nectarines Lord Napier, Early Rivers, and Cardinal, all in splendid condition. Messrs. T. Rivers & Son, Sawbridgeworth, sent Nectarines Early Rivers and Cardinal, in perfect condition; the fruits were of remarkable size, and evidenced the best of culture.

Messrs. Sutton & Sons, Reading, occupied almost the whole of one side of the hall with a collection of vegetables. These included Peas, Cucumbers, and Potatoes growing either in pots or boxes, and dishes of Tomatoes, Cucumbers, and Potatoes. The plants were splendidly grown, and included Peas Sutton's Early Giant, Sutton's A1, May Queen, and Empress of India; Cucumbers Lord Roberts, Peerless, and Sutton's A1; Potatoes Ringleader, Ninetyfold, May Queen, Sutton's A1, Harbinger and Sutton's Ashleaf; and Tomato Winter Beauty. This was a most striking exhibit, and was the centre of a considerable amount of attention.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. H. B. May, R. Dean, J. F. McLeod, R. Fife, C. Jeffries, W. Bain, J. D. Pawle, J. T. Bennett Poë, C. E. Shea, E. H. Jenkins, H. J. Jones, C. Blick, E. T. Cook, G. Paul, J. Walker, G. Reuthe, J. Hudson, J. Jennings, and E. Mawley.

Messrs. W. Paul & Son, Waltham Cross, again arranged a large group of Roses in pots, with baskets of cut blooms, and a few boxes filled with specimen blooms. Crimson Rambler and the Wichuriana Roses, Pink Roamer and Gardenia represented the garden Roses, while standard specimens of Enchantress, Bridesmaid, Helena Cambier, Madame de Watteville, and Madame Cusin were charming. The cut

flowers included Maman Cochet, La France, Madam Wagram, Tennyson, Duchess of Albany, Marquis Litta, and some promising seedlings.

One of the most attractive exhibits in the hall was that from Messrs. Jas. Veitch & Sons, Ltd., Chelsea, which was composed of a grand collection of *Eremurus* with a groundwork of *Primula japonica*. The *Eremurus* included *E. robustus* and *E. himalaicus*; these were remarkable for their huge size and splendid development, and it is doubtful if a finer exhibit of these plants has ever been seen, and the interest evinced from all classes at the show only tended to show how much they were appreciated. Hardy flowers and Clematises were arranged by Messrs. G. Jackman & Son, Woking, the Campanulas, Pyrethrums, Irises and Clematis hybrids being especially noteworthy, the latter including Duchess of Albany, Duchess of York, and Countess of Onslow. Campanulas Mariesi and *C. persicifolia alba grandiflora* were conspicuous, as were also *Aquilegia californica*, and a number of Pyrethrums.

Messrs. Dobbie & Co., Rothesay, had a beautiful table of Sweet Peas, with a few good African Marigolds. The Sweet Peas were well arranged in vases, but the groundwork of dark blue was detrimental to the colours of the flowers. The chief varieties were Modesty, Peach Blossom, America, Triumph, Mars, Meteor, Lovely, Aurora, Mikado, Lady Penzance, Oriental, Lady Mary Currie, and Gorgeous; these were all in capital form.

Messrs. Kelway & Son, Langport, occupied a table running the entire length of the hall with a collection of herbaceous Pæonies and Pyrethrums. In the former section, Briton Ferry, Langport Belle, Lord Panncoforte, Dr. Bonavia, and Mrs. Gwyn Lewis were excellent, while the tree Pæonies Lord Roberts, Countess Crewe, Mrs. Beerbohm Treo, Lord Kitchener, and James Kelway were beautiful. The Pyrethrums James Kelway, a deep crimson semi-double, Firefly, Fairfax, Apemantus, Lady Synons, and Rosetta in the singles, and Alfred, Ernest Figaro, Melton, Captain Nares, Lady Kildare, and Leonard Kelway were the best of the double forms. Messrs. Wallace and Co., Colchester, arranged a tasteful display of hardy flowers. The Irises, Pæonies, and Calochorti formed the chief features, but these by no means completed the display. The Lilliums were especially interesting. Brodiaeas were also strongly in evidence, while the Ixias, German Irises, and *Eremurus* made a very interesting exhibit.

Rhododendrons from Messrs. W. Paul & Son, Waltham Cross, occupied a large space, and a capital display they formed, arranged in baskets and boxes. Varieties that appeared to tower above their neighbours for size and colouring were Alarum, Athene, Michael Waterer, The Queen, Sappho, Lady Dorothy Nevill, Sir R. Peel, and James Bateman. It should be added that these flowers were all produced in loam, and those who have had the pleasure of walking through the Loughton nursery, where they are grown, can testify to the stability of the soil for clinging to the boots, showing that there is no vestige of peat in the soil.

A delightful bank of Gloxinias was arranged in Maidenhair Fern by Messrs. Jas. Veitch & Sons. The plants were well flowered, and the colours particularly bright. Monarch and Empress of India are both exceedingly bright crimson varieties, while Virginalis, Seraph, The Bride, Mephisto, and Elaine were attractive and bright. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, had an extensive exhibit of Begonias, Gloxinias, and hardy flowers. The Begonias were dwarf and well flowered. In the single section Starlight, Gloriosum, Nero, Mrs. T. Lunt, and Jealousy were best. The doubles included May Clarke, Mr. Walter Kinch, a fine crimson; H. A. Weeks, and May Crawford. The hardy flowers comprised some beautiful bunches of Spanish Irises, such as Thunderbolt, Golden King, Purple King, and British Queen. The early Gladioli were also beautifully developed, while the whole table was draped with *Panicum*, *Ficus repens*, and Ferns.

Messrs. R. & G. Cuthbert, Southgate, staged a table of hybrid Spiræas in fine condition. The varieties were Dr. Cattie, Professor Suringar, Queen of Holland, a lovely form; H. Witte, and W. E. Gladstone. From Messrs. Paul & Son, Cheshunt, came some vases of new Roses, Rhododendrons, and a tricolor Beech. The Roses included J. B. M. Camm, a grand variety; The Queen of Sweden and Norway, a promising Tea; and a single *Rosa sinica* hybrid Anemone; also Rhododendrons Duke of York, a bright rose pink, and the Duchess of York, a paler variety. Garden Roses were exhibited in good form by Messrs. F. Cant & Co., Colchester. The varieties were Pink Scotch, Harrisoni, *Rosa alpina*, Paul's Carmine Pillar, rugosa alba, and r. rubra, with a few other varieties. An interesting display of hardy flowers was staged by Messrs. T. S. Ware, Ltd., Feltham. The Irises and Lilliums were good, while the little rock and alpine plants appeared to interest the visitors.

Messrs. Barr & Sons, Covent Garden, had a choice arrangement of Pæonies, Irises, and alpine plants, with a general collection of hardy flowers. In the Irises, Neglecta Virginia, I. Biliotti, I. pallida Queen of May, I. variegata Gracchus, I. pallida Astarte, and I. p. Albert Victor were effective. The most showy Pæonies were Flesh White, atro-rubra plena, and anemoneflora plena. The Oriental Poppies, Brightness, bracteatum, and Perfection, added a brilliancy to the exhibit. Messrs. R. H. Bath, Ltd., Wisbech, staged a small group of a new yellow Carnation, Lord Roberts, which appears to be a good variety with a non-bursting calyx. A welcome group of Carnations was that arranged by Mr. H. Dixon, Woodside Gardens, Hailsham. The plants were healthy, and the flowers well developed. The best were

Belladonna, Barras, Miss Violet, F. Wellesley, Isinglass, The Cadi' Belladonna, and Lady Hindlip. Mr. Walters, gardener to Lord Gerard, Ashford, had a small exhibit of the Carnation Lady Gerard, a pale primrose variety of the Malmaison type; and Mr. S. Bide, Farnham, sent a basket of Calla Primrose Dame, a pale yellow of the C. Elliottiana type. Messrs. Paul & Son, Cheshunt, exhibited a basket of Senecio lilacinus, a species from South Africa. A box of hybrid Rhododendrons were exhibited by Messrs. J. Veitch & Sons, Ltd. The varieties were those that have so often been seen during the past winter, except that they are a little brighter in colour at the present time.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de B. Crawshay, H. Little, H. T. Pitt, F. Sander, H. J. Chapman, W. H. Young, H. A. Tracey, J. Wilson Potter, W. H. White, E. Hill, J. Douglas, J. Colman, and W. Cobb.

Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, contributed a brightly attractive group of Orchids. The plants were splendidly grown, and carried excellent flowers. Amongst others we observed Cattleyas Mendeli Prince of Wales, Warneri, Mendeli Nellie Wigan, Mossiae, M. E. Ashworth, and M. Reineckiana, Thunia Marshalliana, Lælias tenebrosa and purpurata, Phalaenopsis fuscata Manni and grandiflora, Aërides Fieldingi, Lælio-Cattleyas Arnoldiana and eximia, Dendrobiums Farmeri albens, Owenianum, and Farmeri, Odontoglossums citrosimum and crispum, Cypripediums in variety, Miltonias, Cymbidium tigrinum, Lælia Brassavola Digbyana, and Masdevallia Harryana.

A charming group of Orchids was arranged by Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill. The plants were not numerous, but showed admirable culture. There were Cattleyas, Lælias, Miltonias, Dendrobiums, Cypripediums, Oncidiums, and Odontoglossums, including the Rosslyn variety of excellens, which received a first-class certificate in 1898, when it carried ten flowers, in 1899 it carried nine flowers, and on this occasion had ten flowers; it is now said that this is a form of Loochristyensis.

There were numbers of small exhibitors of Orchids. Sir James Miller, Bart., who sent Lælio-Cattleyas Martineti and Lady Miller; W. A. Gillett, Esq., a form of Odontoglossum crispum; R. I. Measures, Esq., Miltonia vexillaria, Cambridge Lodge var., and Saccolabium ampullaceum mculmeinense (this is the original plant that was certificated in 1868); Mr. E. Kromer, Oncidium nallum; Mr. H. Tracey, Cattleya Mossiae and Brassia longissima; Mr. J. Douglas, Cattleya labiata Warneri (these flowers were from the original plant showed by Mr. Rucker and certificated in 1866); A. H. Smee, Esq., Cattleya Mossiae hackbridgiensis, C. Mendeli hackbridgiensis, and Cypripedium Lawrenceanum hackbridgiensis; de Barri Crawshay, Esq., Odontoglossum crispum Cecile de Rechfort, O. citrosimum rosefieldiense, O. Andersonianum candidum, and O. elegantius (a natural hybrid from O. Pescatorei and O. Lindleyanum); and Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Dendrobium Dalhousianum.

MEDALS.—Fruit Committee.—Silver-gilt Knightian medals to Messrs. Sutton & Sons and T. Rivers & Son; silver Knightian medal to Mr. J. Hudson; silver Banksian medals to Messrs. E. Beckett and Laxton Bros. Floral Committee.—Gold medal and silver Flora medals to Messrs. J. Veitch & Sons; silver-gilt Flora medal to Messrs. Kelway and Son; silver Flora medals to Messrs. Dobbie & Co., Jackman and Son, H. J. Jones, and Wallace & Co.; silver Banksian medals to Messrs. Barr & Sons, T. S. Ware, H. T. Dixon, and W. Paul & Son. Orchid Committee.—Silver Flora medal to Mr. W. H. Young, and silver Banksian medal to Mr. F. W. Thurgood.

Certificates and Awards of Merit.

Begonia Gladys Hemsley (H. J. Jones).—An excellent double variety of a soft salmon colour (award of merit).

Dendrobium Dalhousianum (W. H. White).—A handsome flower, of which the parentage is indicated in the specific name. It has all the colour of nobile with the size and much of the form of Dalhousianum (award of merit).

Lilac Madame Abel Chatenay (W. Marshall).—A double white variety of the first size and form (award of merit).

Pæony Lady Curzon (Kelway & Son).—A fine herbaceous variety; the colour is delicate blush (award of merit).

Pæony Lord Roberts (Kelway & Son).—A superb silvery white variety of the tree section (award of merit).

Pæony Cream Perfection (Wallace & Co.).—The varietal name admirably describes the colour of this superb flower (award of merit).

Rhododendron Pink Pearl (W. Bain).—A magnificent variety; the flowers are large, and of soft pink colour, with brown spots on the upper portion (first-class certificate).

Rose sinica Anemone (Paul & Son).—A free growing single variety of rich rosy red colour (award of merit).

Rose Tennyson (Wm. Paul & Son).—A Hybrid Tea of perfect form; the colour is delicate rose (award of merit).

Rose Pink Roamer (Wm. Paul & Son).—The varietal name tells both colour and habit; it is a splendid Rose (award of merit).

Streptocarpus achimenesiflorus (J. Veitch & Sons).—This splendid strain is illustrated and described on page 479 (award of merit).

Horticultural Shows.

Cheltenham.—May 30th.

ON the 30th ult. the above show was held in the Montpellier Gardens of the garden borough of Gloucestershire. The weather was fortunately all that could be desired. Mr. Cypher, as usual, proved invincible. The groups of plants arranged on a space covering several hundred feet were very fine indeed, and the first honours went to Mr. Cypher's exhibit. It consisted of a series of independent groups, backed up with splendidly grown elegant Palms and other foliage plants. Underneath was a rustic arrangement of virgin cork into which were placed choice Orchids of the finest and most suitable kinds. This group was a masterpiece of art. In the second place came Mr. Vause of Leamington, who displayed a similar arrangement in his usual excellent style. Mr. Cypher also carried off first honours for a



FIG. 131.—CELMISIA SPECTABILIS.

group of Orchids, among which we noticed some very choice varieties of Lælia purpurata, Dendrobiums, Cattleyas, particularly C. citrina. Mr. Marsh, gardener to the Rev. Butt, showed, but not for competition, a large and notable group of stove and greenhouse plants, and also a very fine arrangement of Orchids, amongst which were choice Lælia purpurata.

The first prize for ten greenhouse and stove flowering plants was also taken by Mr. Cypher, amongst which were very finely grown plants of Erica Cavendishi, Bougainvillea Cypheri, a splendid variety; Anthurium Cypheri, Phœnocomma Barnesi. Mr. Vause followed with another fine group. Indian Azaleas were well shown by Mr. Cypher and Mr. Marsh; and fruit by Mr. Hortick, Cowley Manor. In the bouquet section Messrs. Pates & Sharpe secured first place, and Mr. Vause second. There were also several meritorious exhibits, but not for competition—namely, a splendid assortment of choice cut flowers of Messrs. Pates & Sharpe; and excellent hardy cut flowers

of Mr. Whitto, of Worcester. Certificates of merit were awarded to Mr. Marsh for some splendid Indian Azaleas, and for a splendid group.

Manchester.—June 2nd.

NEXT in importance of the earlier season shows to that of the Temple comes Manchester, a city which contains so many enthusiastic amateurs as to make one wish that the conditions under which the plants grow were more favourable. It is approaching the half century since the first of these great Whitsun-week exhibitions was organised, and during this time the society has emerged from many difficulties which to many would have appeared almost insurmountable. With a president like Thomas Statter, Esq., of Stand Hall, Whitefield, a gentleman so well known in the Orchid world, with Mr. P. Weathers, the energetic orator, and Mr. Paul, his able assistant, the Manchester show enjoys a directorate which will not readily allow it to recede from its achieved high position.

For many years the exhibition has been opened on the Friday previous to Whit-Monday in the Royal Botanical Gardens, but this year Saturday was chosen, and a lovely day, though perhaps a little too warm. So good were the Orchids that in the opinion of some judges the groups were superior to those at the Temple. Messrs. Sutton & Sons, Reading, took the gold medal with some lovely spotted forms of Gloxinias; Messrs. Kelway & Son also won a gold medal with a most handsome stand of Pæonies, double and single, Pyrethrums, Irises, and many delightful outdoor flowers; and Messrs. John Peed & Son were awarded a third gold medal for their group of magnificent Caladiums. The Bagshot Rhododendrons, which occupied almost half the large annexe, were in the pink of condition, and for these Messrs. Anthony Waterer & Son also received the society's gold medal. A gold medal was also awarded to Messrs. W. Cutbush & Sons, Highgate, who furnished a huge bank of fine flowering plants, consisting of tree Carnations, Oranges full of fruit, Heaths, and a miscellaneous variety of excellent quality. Their animals in plant life growing in tubs caused much surprise by their quaint appearance.

The Orchids were certainly remarkable for their beauty and wealth of rich varieties, and there was no gainsaying the fact that Mr. James Cypher, of Cheltenham, not only won the gold medal, but won golden opinions for excellence in the arrangement of his group. Mr. Cypher's *Cattleya Mossiæ* delicatissima, a lovely pale blush sepals and petals, with purple and rich gold throat markings, was greatly admired, and his Lady Roberts, a very dark purpurata, received an award of merit. Messrs. J. Heath, of Cheltenham, who ranked second, had fine *Lælia* and types of *Cattleya Mossiæ*. Messrs. E. Ashworth and T. Statter were first and second amongst amateurs. Conspicuous here were the Harefield variety of *Cypripedium Rothschildianum*, and the two *Odontoglossums*, Arthur and Ernest Ashworth, which received first-class certificates. In the class for ten specimen Orchids in bloom, Mr. Cypher emerged at the top with great plants of *Dendrobium nobile splendens*, *Lælia purpurata* Queen Empress, a gorgeous variety (award of merit), *Cattleya Mossiæ* Distinction, fine *Miltonia vexillarium*, and *Oncidium serratum*; Messrs. Heath & Son were again second, while Mr. Mulloy, gardener to T. Harker, Esq., Wiltlington, came third.

And now to chronicle the non-competing section of Orchid exhibitors. Messrs. Charlesworth & Co., Heaton, Bradford, for beautiful plants of *Oncidium Marshallianum*, *Cypripedium Chapmani* heatonense F.C.C., the light and dark forms of *Mendeli Psyche* and *Excelsior*, *Cypripedium Vipani*, *Lycaste Ballæ*, *Odontoglossum crispum* Imperator, *Cattleya Mossiæ* magnifica, received awards of merit. A F.C.C. was also deservedly granted for *Odontoglossum* Lady Primrose, which has pure primrose sepals and very charming petals. Mr. John Cowan shared with Messrs. Charlesworth & Co. the distinction of being awarded two first-class certificates for *Cælogyne pandurata* and *Cypripedium Lawrenceanum* Hyeannum, and an award of merit was granted for a splendid large flowered type of *Cattleya Mossiæ*, and cultural certificates for an immense specimen *Cattleya Mossiæ* carrying over fifty flowers, and a well flowered fine variety *Odontoglossum crispum*. Messrs. Stanley Ashton & Co.'s exhibit of *Odontoglossum crispum* was elegant, more particularly the variety Ada, a giant white form some 4½ inches across (A.M.), and the splendid forms of *Cattleya Mossiæ*, such as southgatense, Harold, Princess May, also *Lælia purpurata* Russelliana with twenty-five flowers, and others. To each of the above three firms gold medals were well awarded. Messrs. Hugh Low & Co., who won the silver medal, had some delightful forms of *Cattleya Mossiæ*, more particularly one with white sepals and petals, with rich chrome throat with purple stain, and also received an award of merit for *Odontoglossum Andersonianum* albiflorum, extra rich spike, with faint crimson spots.

The groups of miscellaneous plants were quite in keeping with Manchester traditions, Messrs. R. P. Ker & Sons, Aigburth Nursery, Liverpool, having a boldly effective one, admirably arranged, and containing many choice plants for which the firm is noted. In addition to taking leading honours for their splendid group, Messrs. R. P. Ker & Sons were awarded the society's gold medal for extra excellence of plants. Mr. J. McIntyre, gardener to Mrs. Pease, Darlington, scored another decided success in his beautiful first-prize group, in addition to taking many prizes for specimen stove and greenhouse plants; while Mr. Upjohn, gardener to the Earl of Ellesmere, Worsley Hall, was second in this class.



Hardy Fruit Garden.

Thinning Wall Fruit.—Thinning the fruit of Apricots, Peaches, Nectarines, as well as other fruits, is an operation which gives good results, inasmuch as a limited number draws less upon the resources of the trees, especially as regards the formation of the stones in stone fruits. Where there are a large number of fruits it is evident that the stones alone must abstract a large amount of food from the soil, leaving less for the fleshy parts, which suffer in consequence. Hence the value of thinning is apparent, increasing as it does the bulk of fleshy substance and enlarging the fruits to a profitable size. Though, as a rule, thinning is carried out gradually, the majority of fruits which need removal may now be cut out. Exercise judgment in doing this, the rule being to leave a less number of fruits on weak, and a larger number on vigorous shoots. The ill-placed and malformed are always removed early. The final thinning consists of spacing out the best according to the strength of branches and shoots, and the general vigour and healthiness of the trees.

Regulating Wall Trees.—The young shoots of Apricots, Peaches, Nectarines, and Morello Cherries, which are to be retained for the future crop of fruit, ought to be disposed in vacant spaces, so that the growths may extend in the directions they are wanted and attain a sturdy character. The neglect of this at the present time results in many of the best shoots being spoiled by a crowd of superfluous growths which hinder the process of building up and finally ripening. In regard to Apricots, the reduction of the superfluous shoots may in many cases be turned to good account, as, for instance, well placed shoots growing in a foreright position. These may be shortened back to three or four leaves for forming spurs, instead of dispensing with them altogether. They, however, must not be crowded. At the same time nail or tie the young shoots close to the wall. Peaches, Nectarines, and Morello Cherries are chiefly refurnished each year with an ample supply of young wood, this being the best method for insuring good crops. Shortening shoots to form spurs is applicable to these as to Apricots, but it is not generally adopted. The annual shoots may be reserved much more thickly with the Morello Cherries than with Peaches and Nectarines. Choose shoots originating low down the branches, so that the base of trees may be kept well furnished. When the shoots are being first arranged with young trees it is a good plan to originate them on the upper sides of branches, establishing main branches at intervals to allow young shoots of medium length to be trained in.

Plums on walls are usually best if allowed to bear chiefly on spurs which are encouraged to form naturally or produced artificially by the summer stopping of foreright shoots. This stopping with Plums may be done now, leaving three good leaves. It will have the effect of plumping up the lower buds into blossom buds, though the upper buds may break into growth again. This can be checked at the first leaf. Old specimens are liable to lose branches, but if vacancies occur they may be filled by training in young growths, which will fruit the second season.

Cordon Gooseberries and Currants.—The branches of cordon trees are usually arranged at the proper distances, and therefore need no attention, but the growths upon them require some preliminary weeding out of useless twiggy growths, cutting them out at their origin. They prevent light and air reaching the base of shoots. Foreright growths issuing from the spurs are now advanced enough to be shortened back to three pairs of leaves. The process will admit light and air to the basal buds, and also help in the ripening of the fruit. Unless the leading shoot has reached its limit of space it should remain unshortened.

Watering Wall Trees.—The demands of wall trees at the present time for moisture are extensive. The base of walls is usually dry owing to the extra drainage and the difficulty of sufficient rainfall reaching the roots. Roots strike out in various directions to obtain it, often passing downwards into uncongenial subsoil, which causes sappy and rampant growth. Adequate moisture in the surface soil induces the roots to remain there, and they will do so if a liberal mulching of manure is employed during the summer season for the purpose of maintaining the soil uniformly moist.

Strawberries.—Immediately fruit commences to show colour, covering the beds with nets is important for the purpose of excluding birds. Beds with the fruit swelling and advancing to the ripening period may be copiously watered with liquid manure. Cut off all runners from newly planted Strawberries, also flower trusses. The formation of strong crowns the first season is very important. Destroy weeds by hoeing down the small seedlings, but fork up the strong specimens. Hoeing is not practicable when the beds are mulched, nor is it so necessary at the present time, as the manure keeps down the growth of weeds.

Fruit Forcing.

Peaches and Nectarines.—Early Houses.—When trees of the very early varieties, such as Alexander, Waterloo, and Early Louise Peaches, Cardinal, Advance, and Rivers' Early Nectarines have been cleared of the fruits, the shoots on which they were borne, if not required for the extension of the trees, should be cut away to allow light and air free access to the foliage. Syringe forcibly to cleanse the leaves of red spider, and if this and scale continue troublesome, the prompt application of an insecticide will be necessary to eradicate the pests. It is highly important that the foliage be kept healthy, and to prevent over-maturity of the wood or buds it is necessary to keep the atmosphere of the house cool by ventilating to the fullest extent after the fruit is gathered, excepting when the weather be unusually cold and the wood somewhat sappy. Keep the borders moist, and in showery weather remove the roof-lights. Keep gross laterals stopped, but avoid giving a check by a great reduction of foliage at one time, as this has a tendency to hasten the ripening of the growths, and when such is the case the trees will be swelling or casting their buds through over-development when they should be resting.

Trees of Hale's Early, A Bec, Rivers' Early York, Early Alfred, Dr. Hogg, Dymond, Stirling Castle, Royal George, Grosse Mignonne, Noblesse, and Bellegarde Peaches, with Lord Napier, Rivers' Orange, Stanwick Elruge, and Humboldt Nectarines, in the same house, will be ripening their fruits, and must not be syringed unless the trees become infested with red spider. When water hangs on the fruits for any length of time after they commence ripening the skin is liable to crack and the edges of the fissures are soon attacked by a mould, which imparts a musty flavour. The trees must not be allowed to suffer by want of water at the roots, but any excess of moisture at this stage has a tendency to cause splitting at the stone.

Houses Started Early in January.—Where the trees have been forced for several years consecutively they will have the fruit in the condition described in the preceding paragraph, but where they are forced for the first time, or have been forwarded gently, the earliest fruits will now be ripening. The leaves should be turned aside, and the fruit raised on laths placed across the wires of the trellis and secured with its apex to the light. This, however, ought to have been effected some time ago, and the fruit will, where it was done, now have attained a good colour. If the weather prove dull and wet gentle fire heat will be necessary to secure a circulation of air constantly, the temperature being maintained at 60° to 65° at night and 70° to 75° by day. Cease syringing as soon as the fruit begins to ripen or soften, and take care to have the foliage free from red spider before the syringing ceases, or the pest will increase so rapidly whilst the fruit is ripening as to seriously jeopardise next year's crop. There must not be any deficiency of moisture in the border, and, if necessary, give a thorough supply of water, mulching with about a couple of inches of light, rather lumpy material, such as Mushroom-bed refuse or partially decayed stable litter.

Succession Houses.—During the stoning process the trees must not be hurried or it may be fatal to the crop, therefore allow time for this most important point. Allow a free circulation of air, ventilating early in the morning, and close in the afternoon with an abundance of atmospheric moisture, so as to raise the heat to 80° or 85°, and ventilate a little afterwards for the night, the temperature being allowed to fall to between 60° and 65°. This must only be practised after the stoning is completed, as a close atmosphere has a tendency to promote growth, which is not favourable to that process, therefore avoid undue excitement when the trees are in that condition. When the fruits have stoned remove all surplus fruits, and turn the others with their apexes to the light to insure colour and even ripening. Allow a rather free extension of the laterals as an encouragement of root action, but be careful not to crowd the principal foliage, and keep red spider in subjection by syringing twice a day. Give thorough supplies of water through a surface mulching not more than a couple of inches thick, of lumpy material, and supply weakly trees with liquid manure. Vigorous trees will not need more than a surface mulching, as high feeding will only cause grossness, and must be studiously avoided.

Late Houses.—Train and tie in the shoots that are to carry next year's crop, allowing them to extend to a length of about 15 inches or more if there be space, or stop them at about that size and pinch laterals to one leaf, being careful to avoid overcrowding. Young shoots required for extension or furnishing the trees should be allowed to extend as far as space admits, and pinch all side shoots on last year's extensions that are not required for next year's fruiting or furnishing the trees, so as to form spurs and secure an equal distribution of the sap.

In thinning the fruit leave a few more than will be required for the crop. A Peach to every square foot of trellis covered by the trees is ample to secure the finest specimens of the large fruited varieties; the medium sized and Nectarines may be left a little closer. Keep the leaves clean by syringing twice a day, and always sufficiently early to allow the trees to become dry before night. If insects cannot be kept under by these means promptly apply an insecticide. Mulch the borders with a little short manure, or if the trees are young and vigorous lighter and less rich material will be more suitable. Water thoroughly whenever necessary, always giving sufficient at a time to reach the drainage. Ventilate early and increase the ventilation with

the sun heat, closing early in the afternoon. If the fruit is wanted late, however, keep the atmosphere as cool as possible by free ventilation day and night.

Recently Planted or Young Trees.—In the training of these disbudding plays an important part. Leave the main branches or shoots for forming them 15 to 18 inches asunder, and the bearing wood at a similar distance on the last and previous year's wood, training the extensions their full length, and pinching the side shoots on last year's wood that are not required for bearing or extension to two or three leaves, so as to form spurs, but do not overcrowd the trees with foliage. These stubby shoots often give good results whilst the trees are young, setting and stoning the fruit better than is the case on strong young wood. Pinch laterals at the first joint, and successional growths as made. Avoid exciting too vigorous growth by the use of stimulants, employing nitrogenous manures sparingly, and an excessive supply of water at the roots, but employ phosphatic manure with a firm soil, so as to secure a free fibrous root formation, and sturdy, short-jointed, thoroughly solidified wood.

THE BEE-KEEPER.

Extracted Honey.

IN many districts run, or extracted honey, is in greater demand than honey in the comb. Where this is the case bee-keepers should lose no time in making arrangements for obtaining a surplus. One fact should always be kept in mind—namely, the stock having the greatest number of worker bees will store the heaviest weight of honey. For this reason it is an advantage to encourage the bees to commence breeding early in the spring, and should the weather be cold give them the necessary attention as advised in previous notes. The present season has been most trying to the bees, and many colonies are still weak. It is, however, surprising how those stocks have improved in strength which received timely attention.

No one can deny the fact that in an apiary where several stocks of bees are kept there will always be found some that are weaker than others. If we work solely for a surplus, and attempt to obtain supers in whatever form they may be used, from each individual stock it will be found that the weaker colonies will only have reached the desired strength when the honey flow is over. There will thus be a waste of energy on the part of the bees in the weak stocks, and there being no system of rearing young queens they would gradually become weaker from this cause alone. Shallow frames are excellent for obtaining a good sample of run honey, but, as in the case of placing a crate of sections on a hive, care must be taken that the stock is well crowded with bees. If they are not of the desired strength, and honey is coming in freely, a frame or more of hatching brood with the adhering bees may be taken from another colony to strengthen it. If this is done during the middle of a warm day no harm will accrue, as the other bees will take readily to them.

Using Full Sized Combs.

We have invariably obtained the greatest weight of honey when full sized combs have been used. Probably the system on which they are worked has something to do with it. By using the standard frame for extracting purposes we are enabled to build up immense colonies, which will take advantage of a few hours of bright sunshine to store a surplus. Were these bees distributed between two or three stocks a much less quantity would be stored. The plan we adopt is to select a given number of stocks from which it is intended to obtain a surplus. These are all headed by a young fertile queen reared the previous year. We then examine each stock, and select three or four frames of the most forward brood, care being taken not to remove the queen. The vacancy is filled up with frames of fully drawn out worker comb or foundation. This will be the means of keeping the queen fully employed. A piece of queen-excluder zinc is then placed over the top of the frames, which will confine the queen to the brood chamber.

A separate box should then be put on the top of the hive to form the super. If made of the right dimensions it will hold nine frames, which are placed wider apart than when used in the brood nest. This super is filled with the combs taken from the brood chamber, and the frames and adhering bees procured from the weaker stocks. These should be placed alternately. The bees need not be sprinkled with syrup or flour, as at this season no fighting will take place, and only the old bees will return to their original stock. It is not necessary to fill the super with combs containing brood, as we always use a large proportion of clean combs, reserved from the previous season. These must always be placed on the outside of those containing brood. This operation should be carried out at least a fortnight before the honey flow is expected.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

•• Grapes Scalded (R. A. C.).—The berries are not shanking but are scalded, which appears rather common this season and at an earlier stage than usual, occurring when the Grapes are about half swollen. A few berries are affected here and there in some cases, but in others the whole side of the bunch or bunches is damaged. We have known instances of nearly two entire crops being lost owing to this, the berries being completely destroyed as if scalded or parboiled. It is caused through late or imperfect ventilation on some bright sunny morning, whilst the internal atmosphere and even the berries are saturated with moisture. The only preventive is earlier ventilation, a little air being left on constantly at the top of the house, and maintaining a gentle warmth with hot water pipes so as to maintain a circulation of air.

Will Ivy or Ampelopsis cause a Skin Irritation and Eczema? (F. C.).—See p. 483, "The Poisonous Sumach." The smell of Ivy freshly cut affects some persons by its unpleasantness, though the leaves really have a balsamic odour, especially when bruised or rubbed, and probably the odour pervades the system, giving rise to cutaneous affections. Indeed, the bruised leaves have been applied to corns, and the fresh ones for dressing ulcers, while, in the form of decoction, they have been recommended in sanious ulcers and cutaneous eruptions. We have also known clippers of Ivy suffer considerable irritation of the skin, which in some cases arises from the mites present on the Ivy and their getting on the human skin, the mites sometimes causing almost intolerable itching. Apart from the mites, the dust set free in the action of cutting the Ivy causes serious irritation of the skin in some cases, whilst in others the dust gives rise to little inconvenience. Of the properties of Ampelopsis we have no knowledge of any ill effects arising from it when worked amongst by gardeners. Your specimen was a Rhus; see "Readers' Views," page 483.

Cattleya Culture (Orchid).—The plants should not grow again the same season, as this weakens them, the important point being to secure a good growth and then give a long period of rest. During the growing season Cattleyas like a genial, moist atmosphere, and an abundant supply of water, which should be administered from the watering can, for in the case of those grown in pots, it has been frequently remarked that, where regularly syringed, they neither grow nor flower so well. Plants on blocks may be syringed, as there is no danger of the water lodging in the large sheathing scales which envelop the young growths. Of course, those on blocks should be taken down during growth two or three times a week and immersed in a tub of water not less in temperature than that of the house. After the pseudo-bulbs are formed, water must be withheld, and the plants allowed a season of rest, but care should be taken to prevent their becoming exhausted during this period, as much injury may arise if the withholding of water be carried to excess. A long season of rest will cause the plants to flower more freely, and to grow more vigorously afterwards. They do not require manure of any kind, a compost of good fibrous peat from which all the gritty part has been well beaten, and chopped living sphagnum with some clean, sharp silver sand supplying all their requirements. Thorough drainage is most essential, letting the plant sit upon the top of the compost, this being elevated somewhat above the rim of the pot, in order to carry away the water quickly. Oncidium Marshallianum requires the same temperature as Cattleyas and similar treatment, taking care not to allow shrivelling of the pseudo-bulbs.

Diseased Tomato Plants (N. Y. Z.).—An article dealing with this subject will be found on page 489.

Rhododendron cinnabarinum (J. F. S.).—This Rhododendron, of which you forward a flowering shoot, is a sub-evergreen Himalayan species, which is not generally regarded as perfectly hardy in this country. These two facts will readily account for the annual loss of a number of the leaves; possibly in a colder aspect, and with the roots in a damper soil, the plant would succumb to the severity of the frosts.

Spraying Engine (E. Newport).—We have no knowledge of the spraying engine to which you allude being used in this country. There are several excellent machines on the English market, some of which are for large cultures, and travel on a wheeled carriage; others are in the form of a knapsack, to be strapped to the shoulders of the operator; while still smaller we have the "Abol" syringe, which diffuses as complete and fine a spray as can be desired for any purpose.

Ledum palustre (W. Ruby).—Wild Rosemary is one of the popular names by which that pretty little North American shrub Ledum palustre is known, a title which has probably been conferred upon it because the foliage possesses a powerful aromatic odour that is particularly noticeable when the leaves are crushed in the hand, or immediately after a shower on a warm day. In other respects it is widely separated from the true Rosemary, and is a close ally of the Kalmias and Rhododendrons, which are so well known and appreciated in gardens. It is a compact shrub, rarely exceeding the height of 3 or 4 feet, and



FIG. 132.—LEDUM PALUSTRE.

bears small, narrow, elliptical, dark green leaves, and close corymbose racemes of white flowers, which are freely produced and render the shrubs very attractive in summer. They are especially suited for planting in the front of shrubbery borders, and being evergreen their neat habit renders them attractive at all seasons. Moderately light soil is requisite to obtain them in the best condition; but they are not very particular, and if the border is well drained little difficulty will be experienced with them. Both *L. palustre* and *L. latifolium*, also known as Labrador Tea, possess some medicinal and economic properties. The former is said to contain qualities which render a decoction of the leaves beneficial as an external application in cutaneous diseases, and in some parts of Germany a peculiar kind of beer is also prepared from the leaves. *L. latifolium* is considered to possess tonic qualities, the leaves having been employed to furnish a substitute for Tea, and they are also infused in beer, which they render heady, and cause headache, nausea, and even delirium. *Ledum palustre* (fig. 132) was admirably shown by Messrs. J. Waterer & Son, Ltd., Bagshot, at the Temple Show.

Succession of Lilacs (H. S.).—Though there are no particularly late varieties of Lilacs, the following are very fine, and give a good display of bloom in May and June: *alba grandiflora*, white; *alba magna*, white; *alba virginalis*, white; *Alphonse Lavalle*, sky blue, shaded with violet, double; *Charles X.*, deep purplish lilac; *Dr. Lindley*, reddish lilac; *Le Gaulois*, dark peach colour with light centres, double; *Lemoinei*, pale ashy lilac, double; *Mathieu de Donbasle*, reddish mauve, double; *Michael Buchner*, pale lilac, rose margined, double; *ranunculiflora*, dark red, becoming lilac, double; *Renoncule*, azure-mauve, double; and *rubella plena*, vinous red changing to rosy violet, double. To these may be added the Persian, *Syringa persica*, and its white variety *S. p. alba*.

Covering Bank Above Tennis Lawn (S. R.).—We are obliged by your further information that Rose Fellenberg is grown at the top of the bank. It will be better, therefore, to keep to *Sedum reflexum*, as *S. spurium coccineum* will not answer when associated with the colour of that Rose. If you like, you could, however, have a band of *S. spurium coccineum* at the base of the bank, the remainder being covered with the other. They flower about the same time, but *S. spurium coccineum* is dwarfer than the other, and is thus unsuitable for a centre. Seeds of it can be procured from Thompson and Morgan, Ipswich. Very small pieces of either inserted in sandy soil and watered would soon take root and form good plants.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. F. S.).—*Rhododendron cinnabarinum*, see page 494. (D. R. W.).—1, *Halesia tetraptera*; 2, a *Doronicum*, but the flowers were quite dead through the package being in the post over Sunday; 3, 4 and 5, were apparently all forms of *Azalea mollis* which probably never had varietal names. (N. S.).—1, *Polypodium vulgare elegantissimum*; 2, *Pteris umbrosa*; 3, *P. serrulata cristata*; 4, *Asplenium bulbiferum*; 5, *Cyrtomium falcatum*; 6, *Pteris tremula*. (B. W. E.).—1, *Coprosma Baneriana variegata*; 2, *Hydrangea Thomas Hogg*; 3, *H. Otakura*; 4, *Cytisus Atlecans*; 5, *Ornithogalum umbellatum*, the Star of Bethlehem; 6, *Spiraea media*. (A. J.).—Only three specimens enclosed. 1, *Thunia alba*; 3, *Dendrobium thyrsiflorum*; 4, *Asphodelus luteus*. (R. C. N.).—1, *Piptanthus nepalensis*; 2, *Spiraea hypericifolia*.

Covent Garden Market.—June 6th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, Californian, case	8 0	10 4 0	Grapes, black	1 6	to 3 6
" Tasmanian	8 0	18 0	Lemons, case	4 0	15 0
Apricots, per box	8 0	10 0	Melons, house, each	1 0	2 0
Cherries, per box	0 9	1 3	Oranges, per case	10 0	25 0
" per ½ bushel	6 0	8 0	Pines, St. Michael's, each	1 0	6 0
" per ¼ bushel	4 0	5 6	Strawberries, lb.	1 6	4 0
Gooseberries, per ½ bushel	2 0	2 6			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz.	1 0	to 2 0	Mustard and Cress, punnet	0 2	to 0 0
Asparagus, green, bundle	0 9	3 0	Onions, bag, about 1 cwt.	4 6	5 6
" giant, bundle	4 0	6 0	" Egyptian, cwt.	6 0	0 0
Beans, Broad, per flat	3 0	4 0	Parsley, doz. bunches	2 0	4 6
" Jersey, per lb.	1 0	0 0	Pens, Jersey, lb.	0 9	1 0
Beet, Red, doz.	0 6	0 0	" French, per pad	2 6	3 6
Cabbages, per tally	5 0	7 6	" English, per bushel	8 0	10 0
Carrots, doz.	3 0	4 0	Potatoes, cwt.	5 0	10 0
" new, bunch	0 3	0 4	" new Jersey, cwt.	12 0	15 0
Cauliflowers, spring, doz.	4 0	6 0	" Tenerife, cwt.	12 0	14 0
Celery, bundle	1 0	1 9	Radishes, long, doz.	0 6	0 0
Cucumbers, doz.	2 0	4 0	" round, doz.	1 0	0 0
Endive, doz.	1 6	2 0	Shallots, lb.	0 3	0 0
Herbs, bunch	0 2	0 0	Spinach, bushel	2 0	3 0
Leeks, bunch	0 3	0 0	Tomatoes, foreign, doz. lb.	4 6	5 6
Lettuce, doz.	0 10	1 2	" English, doz. lb.	6 0	7 6
" Cos, doz.	2 0	3 0	Turnips, bunch	3 0	4 6
Mint, green, doz. bunches	2 0	0 0	" new	0 4	0 10
Mushrooms, lb.	0 8	0 10			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums	2 0	to 3 0	Narcissus, double white,	3 0	to 4 0
Asparagus, Fern, bunch	2 0	2 6	doz. bunches	3 0	to 4 0
Bouvardia, bunch	0 6	0 9	" Pheasant-eye, doz.	1 0	0 0
Carnations, 12 blooms	1 6	2 0	bunches	1 0	0 0
Cattleyas, per doz.	0 0	12 0	Odontoglossums	5 0	7 6
Eucharis, doz.	3 0	4 0	Pelargoniums, doz. bnchs	8 0	12 0
Gardenias, doz.	1 6	2 6	Roses (indoor), doz.	2 6	3 6
Geranium, scarlet, doz.	6 0	9 0	" Red, doz.	2 0	4 0
bnchs.	3 0	4 0	" Safrano, doz.	2 0	3 0
Ixia, doz. bunches	3 0	4 0	" Tea, white, doz.	2 0	3 0
Lilium Harrisii, 12 blooms	3 0	4 0	" Yellow, doz. (Perles)	3 0	4 6
" longiflorum, 12 blooms	3 0	4 0	" Maréchal Niel, doz.	6 0	12 0
Lilac, white, bundle	3 0	4 0	" English (indoor):—		
Lily of the Valley, 12 bun.	6 0	18 0	" La France, doz.	3 0	6 0
Maidenhair Fern, dozen	8 0	10 0	" Mermets, doz.	3 0	8 0
bunches	8 0	10 0	Smilax, bunch	4 0	6 0
Marguerites, doz. bnchs.	3 0	4 0	Tulips, Parrot, doz. bnchs.	4 0	8 0
" Yellow doz. bnchs.	3 0	4 0	" yellow, bunch	1 0	1 6
Mignonette, doz. bunches	3 0	5 0	" bronze, bunch	1 0	1 6

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz.	12 0	to 24 0	Ficus elastica, each	1 6	to 7 6
Arbor Vitæ, var., doz.	6 0	36 0	Foliage plants, var., each	1 0	5 0
Arums, per doz.	6 0	8 0	Genistas, per doz.	8 0	15 0
Aspidistra, doz.	18 0	36 0	Geraniums, scarlet, doz.	6 0	10 0
Aspidistra, specimen	15 0	20 0	" pink, doz.	8 0	10 0
Azaleas, various, each	2 6	5 0	Hydrangeas, white, each	2 6	5 0
Boromias, doz.	20 0	24 0	" pink, doz.	12 0	15 0
Oretons, doz.	18 0	30 0	Lily of Valley, per pot	1 0	2 0
Dracæna, var., doz.	12 0	30 0	Lycopodiums, doz.	3 0	6 0
Dracæna viridis, doz.	9 0	18 0	Marguerite Daisy, doz.	8 0	10 0
Erica various, doz.	8 0	18 0	Mignonette, doz.	8 0	12 0
Euonymus, var., doz.	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz.	4 0	18 0	Palms, in var., each	1 0	15 0
Ferns, var., doz.	4 0	18 0	" specimens	21 0	63 0
" small, 100	4 0	8 0	Spiræas, per doz.	8 0	12 0



Sheep and Shepherds.

THERE is so little land in Great Britain that is unsuitable for the breeding or feeding of sheep, and the animal has been such a help to the British farmer in his struggle to keep his head above water, that everything connected with the sheep is of the greatest possible interest.

It is time now that the sheep dispensed with his warm coat, and all over the country the shears are hard at work, whilst we hear the pitiful bleatings of the lambs anxiously seeking for their mothers in the crowded pens, and often finding mamma hardly recognisable, such a change has the clipping made in her outward appearance. When ewes are being clipped it is a good plan to turn them out to graze for a couple of hours during the evening after clipping is over, and then bring them up again into a dry yard for the night. They will be less likely to get a chill, which so often results in a case of downfall in the udder, one of the most awkward complaints which a shepherd has to deal with. A heavy dose of salts and rubbing of the udder with goosegrease are the chief remedies, but they are only of use if the attack is discovered in its incipient stage. Of course the milk must be drawn, as it would not be suitable for the lamb if its mother would allow it to suck. If the ewe be in anything like good condition the best remedy is the butcher's knife. If she recovers it will be very unlikely that she will be of any more use for breeding purposes, and if killed at once the carcase is excellent food, and will realise a fair price.

Very soon after the clipping the flock should be dipped, or at any rate the lambs must be, and the ewes watered with the solution at the same time, but we prefer to dip all. The ewes newly clipped require to be in the bath a few seconds only, and the operation takes less time than the watering, and is more effectual. This dipping of sheep is becoming a very important matter to the agricultural interest, as there is little doubt that many, if not all, outbreaks of sheep-scab, are due to neglect in this important matter.

At the present time there is considerable agitation in favour of making dipping compulsory, and as it is such a very necessary operation and one so identified with the interests of the flockmaster, it is difficult to see where sound objections to such compulsion could be discovered. One very necessary part of any Bill which may be brought before Parliament to enforce dipping ought to be compulsory registration of really effectual dips. No dip should be allowed for official purposes which has not been tested and certificated by the Board of Agriculture. There will naturally be supervision of dipping by the cattle inspectors now acting, and they will take samples and check the quality of the dips which they find in use. They will thus do something to earn the salaries which they receive and for which some of

them now do very little. It would be a splendid thing to inaugurate such a system of dipping as would make an outbreak of sheep-scab a practical impossibility. Nowadays farmers are very much at the mercy of inspectors, and only very lately a farmer in the north was fined for not reporting an outbreak of scab, which on appeal was proved by a high veterinary authority not to be scab at all. We have ourselves had personal experience of a similar case.

The sheep is an animal of such great adaptability and varies so much in the character of its different breeds that success in sheep breeding and grazing depends almost altogether on two points: 1st, the selection of the most suitable breed for the soil and climate; 2nd, the proper and intelligent management of the flock when chosen.

It is a curious fact, but it has been noticed by many observers, that the owner of a small flock enjoys very good fortune with his sheep. He generally has a good fall of lambs, has few casualties, and his mutton sheep are usually bigger and fatter than those of his neighbours. Some people account for this by stating that the small flock is often numerically weak in proportion to the size of the holding, and that sheep when run thin on the ground invariably do well. There is much truth in this, but we think that a more sensible way of accounting for the success of the small flockmaster is to acknowledge the fact that he gives more individual attention to his sheep; he looks after them himself, having a personal interest in the welfare of each; his shepherding is not done by the hour; in summer he is looking round the sheep before six, so that he may be ready for ploughing at the usual time, whilst the evening again sees him looking over the flock. Too many of the paid shepherds make the day a short one, and the night a long one, and we know by experience that the morning shepherding brings to light many more cases of illness than the evening. The shepherd has to face all kinds of weather, and in storm and snow he must rough it, no doubt, but generally speaking his work is not heavy and he ought to keep both early and late hours if he does his duty in the endeavour to earn the very good wages which his services usually command.

The prevention of lameness is one of the chief points, success in which marks a man as a good shepherd. It is much easier to prevent lameness than to cure it. Many, too many shepherds, neglect looking over their sheep's feet at sufficiently short intervals; of course these periods vary according to the weather and the character of the lair. They think it soon enough to examine a sheep's feet when it is turning lame, whereas if that sheep had been looked at two or three weeks before a very slight use of the knife and application of ointment would have prevented the lameness altogether. It is a remarkable fact that some shepherds, and also some farmers who are their own shepherds, are very little troubled with footrot amongst their flocks. We do not attribute this immunity so much to the soil or locality as to the reasons we have just explained.

The most anxious time of the year for the sheep breeder is the period of two months after weaning. Unless he is prepared with plenty of change of food for his lambs and ample field room for them after they are parted from their dams there is often serious loss. Cabbage, Clover-eddish well grown, well gleaned stubbles, and well matured Rape and Tares, are all capital things to ring the changes on. We have found well hearted Cabbage drawn off and fed to the lambs on old seeds until stubbles are ready, to be as safe and successful a food as any, and a good education for Turnips.

Work on the Home Farm.

Warmer and more summer-like weather has given all vegetation an altered appearance. Wheats are running up fast, and both Barley and Oats have made good progress. We have had one nice rain, but could do with more, as sun and wind have dried the surface soil rather rapidly.

Turnip sowing is proceeding generally, and the seed is going in well, in fact as well as it could do, and in marked contrast to last year when the land was in such a sodden condition. We have no doubt farmers will push on with sowing as fast as possible. Unfortunately

where manure has to be got on for the Swedes the labour difficulty is proving a hindrance. The filling, carting, and spreading of farmyard manure is the heaviest item of labour on a farm. There is a great deal of manure still to get out, and few hands to do the work.

The late frosts affected field Peas adversely, and put them back a little, but they have grown well lately and will soon be in flower. Another nice warm rain would do them much good.

Potatoes are coming up, and many fields are ready for horse-hoeing. Some that were put in early, before the land had thoroughly dried after the wet February, are inclined to be heavy and short of mould between the ridges. A good chisel-toothed horse hoe or grubber must be used to thoroughly break up this soil, as it is of no use earthing Potatoes with half bricks. Potatoes are coming up very regularly this year, there being few gaps or backward plants. This will enable the farmer to get them earthed in good time. Now is the time to apply the top-dressing. We strongly recommend sulphate of ammonia, 2 cwt. to 3 cwt. per acre, as is thought desirable according to the nitrogen required. The hoeing must be got through as soon as possible, weeds are more easily chopped out when small, and the young fibres and forming tubers of the Potatoes less liable to injury by the hoes than if the hoeing is postponed until the tops are stronger.

There has been better luck with the later foals, and we see some nice ones about. As it is found convenient to work the dams a little during the pressure of Turnip sowing, care must be taken not to separate the mare and foal for too long a period, especially in hot weather.

Foot-and-Mouth Disease.—We regret to hear of a fresh outbreak of foot-and-mouth disease at Welwyn, Hertfordshire. Fortunately, only two cows and a bullock were affected, and these were at once killed off. It is supposed the infection was carried by an animal bought at Hitchin Market, but there is not the slightest clue as to how the disease came into the district. The Board of Agriculture have issued an order prohibiting the movement of stock within a large area.

Imports of Eggs.—A Bill has been introduced into the Canadian Parliament providing that all eggs intended for export shall be sold by weight, and that the standard shall be 1½ lbs. per dozen, or 2 ozs. each. It does not apply to the local sales of eggs. This is but one instance of their determination to capture the English market by giving them such goods as they want. We do not think, says a contemporary, selling by weight is any more equitable than selling by number, unless it is determined what proportion of the egg be shell and what shall be meat, but if buyers want them so, why, produce the heavy eggs.

Exhaustion of Land by Oats.—There are two reasons why the Oat crop is exhaustive. One is that its grain contains more of the mineral and nitrogenous elements that are needed by crops than any other grain except Wheat. Besides, the Oat plant has to grow from the germ, ramify its roots through the soil and search out this plant food within the short space of 110 to 120 days. Winter Wheat makes a start in the autumn, then goes into its winter sleep under a blanket of snow or fast locked in frozen soil, and it is then ready to make further growth in soil mellowed by winter's freezing, and therefore having more of its mineral plant food available for present use by any roots that are on hand at the right time to take it up.—("American Agriculturist.")

Dairy Notes.—At the Cornell Experiment Station they tried making cheese from milk containing various proportions of butter fat, and they found that of milk with 3 per cent. fat 100 lbs. made 8·67 lbs. of cheese. That with 4 per cent. fat made 10·8 lbs. of cheese to the 100 lbs. of milk, while of 5 per cent. milk there was 12·6 lbs. of cheese to the 100 lbs. of milk, and a milk with 6 per cent. fat made 14·6 lbs. of cheese to the 100 lbs. of milk. While the increase was not in exact proportion to the amount of butter fat in the milk, it shows at least that 6 per cent. milk makes 70 per cent. more cheese than 3 per cent. milk. This furnishes as good a reason why those who take their milk to cheese factories should be paid higher prices when the milk is rich in butter fat, as there is that they should when they take it to the creamery. And we would wager a large Apple that the cheese made from the 6 per cent. milk was much the best cheese of the lot when properly cured; and another, that the cheese made from the 3 per cent. milk was not much better than some of what are called partly skimmed cheese.

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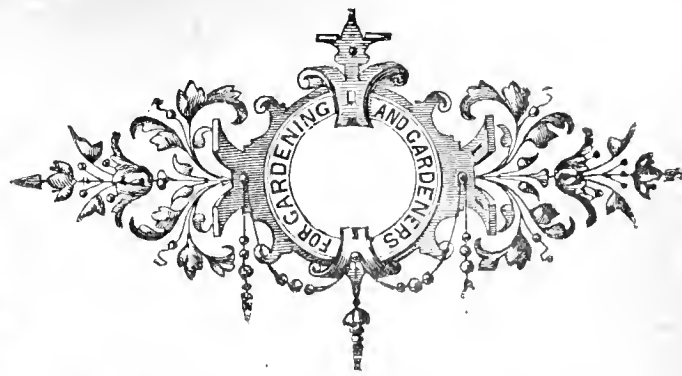
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Journal of Horticulture.

THURSDAY, JUNE 14, 1900.

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Drought and Watering.



THE question of watering has already forced itself unpleasantly to the front, and there is every prospect of the season being an abnormally dry one, with the usual accompaniment of languid vegetation and insects in legions. The experience

of past droughts leads one to delay the application of water till the latest moment in the hope that long expected rain may solve one's difficulties, and at the same time re-invigorate vegetation in a manner that no method of artificial irrigation can quite equal. On the other hand, if it is decided to apply water, as in many cases, especially in closely planted flower beds and borders, is it necessary to do, then it is, to say the least, injudicious to delay doing so till the soil has become overdry—so devoid of moisture as to check growth. By watering sooner growth is continued in a healthy condition with a smaller expenditure of labour and of water than it requires to preserve plants from going from bad to worse. It is obvious, however, that local conditions must largely determine whether it is better to water early and continue watering or to delay in the expectation of rain.

A generally well known phenomenon accompanying irrigation is the comparatively poor progress apparent in those crops that are regularly watered in drought. The soil may be preserved fairly moist, and the plants still exhibit symptoms of malnutrition, so much so that not a few people hesitate on this account to seek a panacea in the hydrant and hose. The results are indeed somewhat similar to what is seen to follow a period of continued wet, and what is familiar in the case of pot plants that are grown for a long time in the same soil and pot without receiving anything but pure water. At the very best, water by itself, if it does no harm, effects no lasting benefit, and all experience goes to demonstrate the need of some simple easily assimilated manurial agent being employed in conjunction with it.

There is nothing novel in this. All thoughtful and

observant cultivators, past and present, have practised in some shape or other a system of manure watering in preference to employing pure water other than in emergencies. The manure may be laid on the surface of the ground, and absorbed into the soil with moisture, or it may be applied directly as a solution either of animal excrement or of some easily soluble chemical matter, as superphosphate of lime; but in whatever form the results are invariably of a like nature, vegetation neither declines nor stagnates, but continues to make effective progress. It may be desirable to submit a word of warning not to overdo manure when it is seen that water may be required repeatedly at short intervals of time. As a matter of fact very slight additions of manure are required to effect the purpose in view, the simplest material, superphosphate, dissolved to the amount of 1 ounce to 50 or 60 gallons of pure water, being amply sufficient to preserve vegetation in vigorous health. Pigeons' manure sown thinly on the surface is next in value and usefulness to the above named, and of course where hose watering is practised all manures must be applied directly to the soil. On this point I will only add that the importance of adding manures to water can be scarcely overestimated.

It is so generally recognised that soil cultivation exerts an influence, perhaps incalculable, on the conservation of moisture that it would appear superfluous to do more than allude to it. There are, however, one or two points that are worth elucidating, and which, as it appears to me, are to a great extent overlooked. We are all agreed on the point that deep stirring—trenching—soil is of first importance, and that the more perfectly soil can be pulverised so much the more fertile is it bound to be. But it is sometimes forgotten that these operations tend to looseness, which, uncorrected by compression while the soil is dry, is a condition by no means to be commended.

Some years ago, while inspecting the garden of an ultra-trencher, we discussed a long flower border which annually trenched, at the time in question was daily watered and seemed to need the treatment. I tried the penetrating power of my stick in the soil, and it went down to the bottom with little beyond a gentle push, indicating the suppressing of all attempts at firming, and the reason for the unremitting attention to watering. In pot culture we are no doubt more advanced in our practice as regards soil compression than in garden culture, and the same remark applies to fruit tree borders. But flower beds and quarters of vegetables should be treated in much the same manner, when it will be found that the power of the soil to conserve moisture has been thereby very greatly increased, with the further advantage that in this condition less water is required to moisten it when it becomes essential.

The management of manure and methods of application have also not a little to do with the question of watering and its necessity. Gardeners are unfortunately largely the creatures of circumstance with regard to the quality of the manures supplied for their using, but the control of its application is entirely in their own hands, and, as a rule, its value as a conserver of moisture is much enhanced when it does not lie for a long period in the ground previous to the crop being put in. It is also important that it be well incorporated throughout the soil, and within easy reach of the roots, while beyond all that it should be well firmed with the soil. Treated in the way above indicated a properly manured soil forms a long standing reserve of moisture, which in many cases will carry a crop over a lengthened drought without the necessity of resorting to the watering can.

Another distinctly advantageous way of garden management is to plant out comparatively small stock during dry weather in preference to that which is large. Waiting for rain is no doubt largely the reason for all kinds of vegetables to be transplanted being allowed to remain in seed bed or where pricked out till they become over-large. Experience proves that a small, healthy, well rooted plant set out in the afternoons of hot weather periods, and started with one application of water, will at once take hold; while larger plants require much water, and do not succeed in the end so well as the smaller, which has involved less labour in its culture. The value of surface hoeing and of mulchings has so often been discussed, that it is unnecessary to do more here than mention them as essential.—B.

The Fruit Prospects.

THERE can scarcely be two opinions as to the coming season's prospects, at any rate in the southern and western parts of England. What may come from eastern and northern counties is not yet much known to those resident in the west, but no doubt evidence will soon be furnished bearing on that point. Gooseberries, the earliest of British fruits to be used in a green state, are said to be everywhere abundant, and this is reported from the largest market, so that all counties are presumably favoured alike. Even in Gooseberries there are exceptions, for in my own case there are many trees bearing scanty crops, while others are fully laden, proving that the same frost resistance is not given to all alike, and frost, though not severe, occurred at the flowering period. All were full of promise at that time, and appeared so for a little while after, but further examination shewed stationary and falling berries in goodly numbers. One of the worst offenders in this respect was Whinham's Industry, and of this I have a fairly large number of trees, some young, others old, but all carrying light crops. Others are most satisfactory, and the berries at this early date seem larger than usual.

Strawberries in the winter, and until the flowering period was advancing, made a very indifferent promise, but later the flower trusses have developed wonderfully, and have been a sheet of blossom. Even small late planted runners are making a surprising effort to fruit, and their present condition could not have been estimated early in the year. In other gardens I saw a week ago very fine leaf growth and promise, and felt disappointed in the comparisons drawn between beds here and those inspected elsewhere. That feeling, however, has to some extent subsided, and give favourable weather I am of the opinion quite as good a Strawberry crop awaits us as in previous years.

Peaches and Apricots outdoors are, and have been, so profusely set that severe thinning has been resorted to, and will need still further attention, Apricots in particular being very thickly clustered. The weather, though far from genial, was free from frost during blossoming time. Ripened wood brought about by the tropical sun of last summer and autumn, and the subsequent heavy rainfall, tend largely towards this satisfactory prospect, and this applies to all other open air fruits, many of which languished for want of root moisture last year. The amount of energy distinctly visible now is scarcely credible when reflection is made on wilted and suffering tree and Strawberry growth in the previous year. There must be a great power in the winter's rain in restoring impaired vitality.

Apples generally are well fruited, though some that bore freely last season flowered more thinly this. This is a trait, however, common to many sorts—alternate years of fruit and scarcity. Cockle's Pippin, Court Pendu Plat, Hoary Morning, and King of Pippins are instances where dearth follows plenty. Many others are so thickly set that severe thinning must of necessity arise. Fearn's Pippin, Mannington's Pearmain, Cox's Orange Pippin, Beauty of Bath, and Frogmore Prolific are densely crowded with swelling fruits. Pears are more uniform—that is, viewed from their present appearance.

The more precocious of the Plums happened to meet the same fate as Gooseberries, but those later in bloom escaped injury. On the west wall there is a much heavier crop than on that opposite—east. On the latter aspect the trees were earlier in bloom when slight frosts occurred to damage them. Washingtons on both aspects present a striking difference in their crops—one needs severe thinning, the other is very sparse in fruit; the same difference appearing between Oullins Golden on a west and south wall. Cherries, both dessert and Morello, are crowded with fruit on the walls, and standard trees promise bountifully. For the past eight years I have not seen such freedom in outdoor Figs as this season. Quinces and Medlars, standard Plums and Damsons, all vie with each other in flower production. Red and White Currants will be plentiful, and in some gardens Black also; but there are cases where these are not so freely cropped. Raspberries look well, and there should be a record crop.—W. S., Rood Ashton.



Phaius bicolor as a Stove Plant.

SPEAKING generally the Orchid family is as accommodating as it is interesting and varied, and its increasing popularity may to a large extent be attributed to this fact. The time was when Orchids were generally understood to be aristocratic flowers, costly to begin with, and requiring much skill and money to cultivate them successfully. Partly owing to the efforts of collectors and tradesmen in bringing plants down to popular prices, and partly to increased knowledge on the side of growers, Orchids no longer occupy isolated positions in the establishments of a few. They are to be found everywhere, and many an amateur with only limited glass accommodation, who does the work himself, has reason to be proud of his little collection of Orchids.

It is not the specialist alone who has done so much to popularise the Orchid family, for there are numerous establishments, large and small, the owners of which have no pretensions to be what are called enthusiasts, and yet they like to have a few Orchids. These are not the places to look for new and rare plants, for hybrids of surpassing beauty, and specimens unique on account of their scarcity; but it is in establishments of this kind where plants of well-known forms are frequently seen blooming profusely in mixed collections of stove and other plants. Sometimes it is a *Dendrobium*, sometimes a *Cattleya*, a *Cypripedium*, *Odontoglossum*, or what not; and though admiration may be confined to a limited few, these solitary specimens, grown among miscellaneous plants, are a source of extreme pleasure to owners, pride to gardeners, and illustrate beyond argument the accommodating nature of the great Orchid family.

The illustration (fig. 133) is a case in point. There is nothing extraordinary about *Phaius bicolor*. It is a well-known form of what may be classed as a somewhat neglected family. It possesses none of the gorgeous beauty of some of its relatives, and its range of variety is much more limited. And yet the *Phaius* is a charming Orchid. It tolerates the conditions of the ordinary stove, and flourishes in the company of the general occupants of such structures. But it will not brook neglect, and more than once I have seen specimens, half-hidden away in odd corners, only failing because they have never had a chance, and yet too tenacious to give up life altogether. These are not pleasant phases of mixed Orchid culture; but when one sees plants such as that shown in the engraving, it is another matter, and one realises that *Phaius bicolor* is a plant well worth growing.

A glance at the accompanying picture shows a healthy well-grown plant with spikes nearly 3 feet high clothed with a wealth of flowers, all illustrative of good culture. Yet this plant was grown in no

special Orchid house, but in a shady part of the stove in the garden of F. H. Cook, Esq., The Grange, Walton-on-Thames. About its treatment Mr. A. Haynes, the gardener, has no long tale to tell, but his remarks are pointed and practical. An 11-inch pot accommodates the specimen, and it revels in its compost of loam, peat, and sand. The tall spikes and large flowers were doubtless built up by frequent applications of liquid manure when the blooms appeared, and the healthy young growths promise well for the future. In short, it is a fine specimen of a well-known plant grown in a mixed collection, and both Mr. Cook and his gardener have every reason to be proud of it. —G. H. HOLLINGWORTH.

Cambridge Lodge.

METROPOLITAN Orchid enthusiasts are now very numerous, and it is pleasant to know that there are yearly accessions to the ranks. Amongst those whose names have become familiar over the entire Orchid-growing world is R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, who has for many years been improving his collection, as well in quality as in quantity. Generally speaking amateur growers devote the major portion of their energy on one or two sections, and what others are grown are simply tolerated, and are not regarded as worthy of any special attention. In Mr. Measures, however, we find an enthusiast in the broadest sense of the word, whose love for Orchids embraces every kind, hybrid and variety, large or small, modest or ornate, that can be found room for in his wonderful London garden. And yet as one inspects the several houses, one is forced to the conclusion that here we have a general specialist, for the *Masdevallia* collection is probably unique as regards species, the *Cypripediums* are superb, the *Cymbidiums* lack practically nothing, and so on through practically the entire Orchid family.

The Cambridge Lodge Orchids have been written of in the pages of the *Journal of Horticulture* on several previous occasions, but to render honour to one of the chief Orchid growers of the metropolis, or, indeed, of the United Kingdom, they may be again referred to.

We can, too, at this moment pay a tribute to Mr. Measures' kindness in allowing all interested to see and admire the beautiful plants he has gathered together with such assiduous care and at such great expense. Thus others can enjoy the sight of many thousands of Orchids in various stages of growth, from the newly vegetating seed to the stately specimens that are alike in only one respect, and that is the excellent state of health. Even as Mr. Measures' tastes in the matter of Orchids are omnivorous, so, too, are apparently Mr. H. J. Chapman's abilities as a cultivator, for one and all are in such condition as must be gratifying to all those immediately concerned in their growth, and is matter for surprise to all visitors to Cambridge Lodge.

When one considers the difficulties that stand in the way of successful Orchid culture in such a densely populated district as Camberwell, and then sees not one, but hundreds of plants that have been there for ten years or more, or have been raised there from seeds, one becomes more and more astonished. We do not mean to say that the flowers attain to that purity of colour that is apparent in the country, but they grow to a considerable size, are of good form and splendid substance. It must be a task of considerable magnitude to

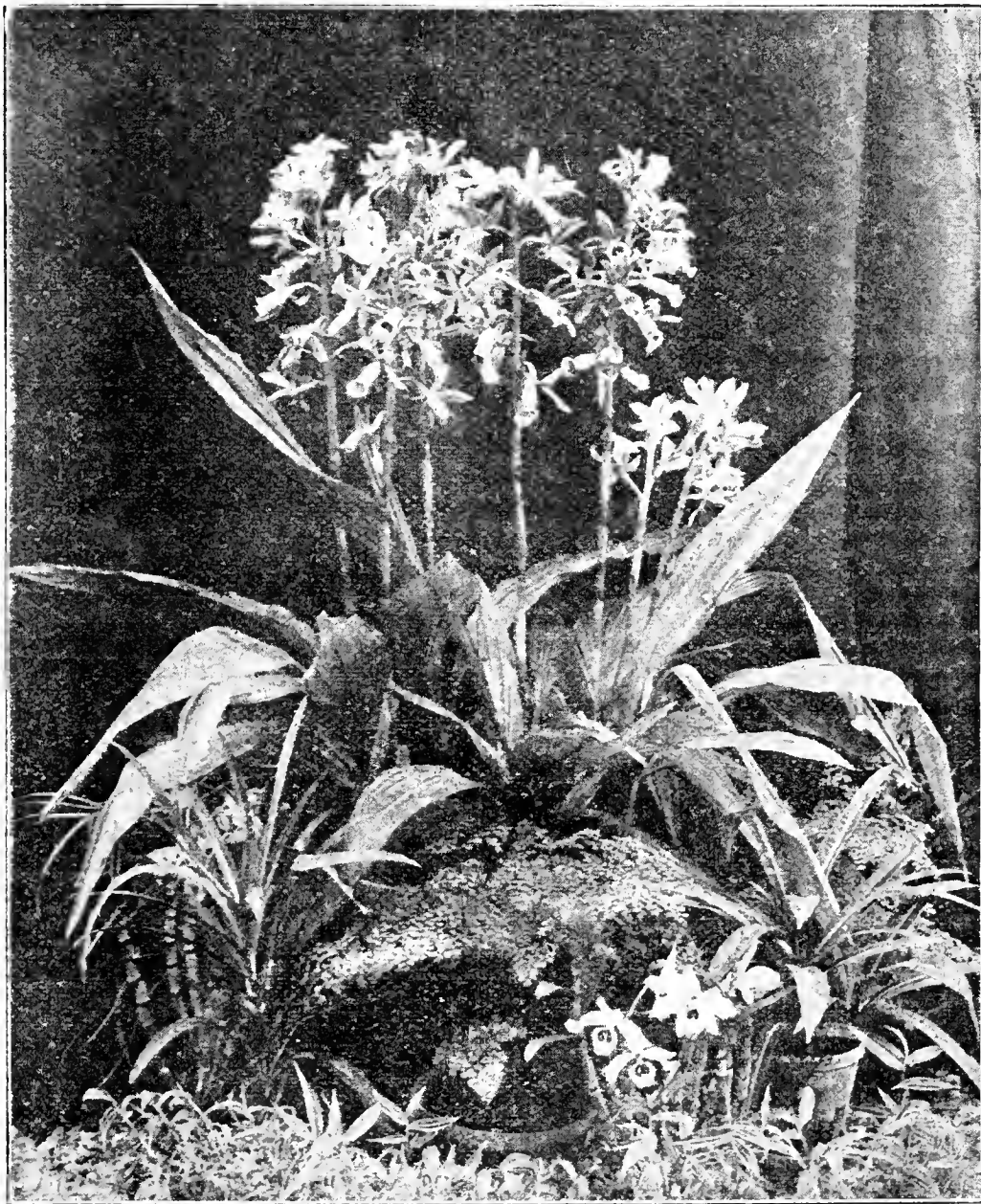


FIG. 133.—PHAIUS BICOLOR.

keep the glass sufficiently clean for the admission of light, and the leaves free from the deleterious substances that float in the air of the modern Babylon.

Turning now to the individual plants, we may first glance at the Masdevallias, of which the collection of species is, as has been said, of exceptional excellence. One cool structure is given over entirely to them, while we find others requiring greater heat in a suitable house, with still more that may be described as of botanical interest in a third. From this some idea may be formed of the number of plants. We jotted down the names of a few of those in flower, and they comprised *Harryana armeniaca*, yellow and salmon; *Harryana lilacina*, *Harryana conchiflora*, cordata-Esradæ, *Stella*, *Gairiana*, yellow and purple; *Ellisiana*, and *Bella*, the latter being one of the plants secured when the Downside collection was broken up. In the warm house the six plants of *M. Lowi* were particularly noteworthy, as they have all been grown from a single plant having three leaves; one of them has now a dozen handsome leaves, which speaks volumes for the cultivation.

In a large span-roofed structure in two compartments we find *Cattleyas* in the first and *Aërides* and *Vandas* in the second. There are, too, a few *Lælio-Cattleyas*, such as *elegans* and *Pallas*, and *Lælias*, including the splendid *purpurata* *R. I. Measures*. The *Cattleyas* consist mainly of magnificent plants of *aurea*, *gigas*, and *labiata*, of which two of the best are *labiata alba* and *R. I. Measures*. The *Vandas* are of such uniform excellence and the collection is so comprehensive that one only will be specially named. That is *V. Parishii Marriottiana*, which is on a raft, and has seven beautiful growths. One does not require to see a plant like this in flower to admire it, as the splendid leaves are alone satisfying. In an adjacent house are the *Odontoglossums*. Owing to lack of space these have not been added to as have most others, and they are consequently almost all old plants or specimens that have been divided. We hear sometimes of *Odontoglossums* going back, but this is not borne out by the Cambridge Lodge plants. *Oncidiums* of the *macranthum* section are in luxuriant health, as are *O. papilio* and *O. Krameri* in another structure. Travelling a few more steps and we reach the *Cymbidiums*, including *Lowianum*, *eburneum*, *Traceyanum*, *giganteum*, and some hybrids. Hanging from the roof of this house, too, is a fine plant of the peculiar *Nanodes Medusæ*.

Cypripediums, individually and collectively, are superb in quality of flower and in the health of the stock. In and out of flower were observed *insignes Ernesti*, *Sanderæ*, and the *Harefield Hall* variety, *Lawrenceanum*, *L. Hycanum*, *callosum*, *Chajmani magnificum* (fig. 134), *venustum Measuresianum*, *Wottoni*, *Curtisi*, *C. viride*, *Rothschildianum*; hybrids of *bellatulum*, *niveum*, *leucochilum*, *Godefroyæ*, and many others showing the range of the collection. There are hundreds of seedling *Cypripediums* and *Cattleyas* for which it will be no easy matter to find space as they gain size and require larger pots. The collection of *Miltonia vexillaria* in variety is excellent; the plants are grown in one structure, and as the flowers expand they are transferred to what may be termed the show house. Here, in conjunction with *Lælio-Cattleya Schilleriana*, superb variety; *Cattleyas* *Wm. Murray*, *Mossia*, and *Arnoldiana*, *Lælia purpurata*, and others, they are making a brilliant display. The plants flower with the greatest freedom, and many of the blooms exceed 5 inches in depth and 3 inches in width. *M. Roezli* from its own particular spot is also employed for adding beauty and variety to the show house.

Time and space are, however, exhausted, and we must bring these notes to a close with a reference to the *Phalænopsis*. These have been reserved until the last because they perhaps show the most marked improvement of any one section. We can remember the plants when they only produced leaves of moderate size and substance, whereas now the foliage is of immense size and remarkable thickness; they are a picture of the rudest health, and are worth travelling far to see, even if not one single plant is in flower. We noted in bloom *Luddemanniana*, *tetrapsus* and *amabilis*. The *Dendrobiums* and others must remain unnoticed for the time, and in conclusion we may tender to Mr. Measures our congratulations on the extent and variety, as well as the excellent health, of one of the finest collections of Orchids that can be found in or out of London.

—ORACHE.

***Tropæolum speciosum*.**—It may interest your correspondent to know that after some trouble I am getting this plant to make a little growth in a corner between a north and a west wall, where, as far as I know, it gets no sun. I find that wire netting promotes the early growth better than twigs, I fancy because the metal condenses a certain amount of moisture. I have been long puzzled to know why this native of South America should only flourish in Scotland. As I understand you, it is drought, not heat, we have to guard against.—RET RAILL.



Rose Show Fixtures in 1900.

- June 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Sonthampton.*
- „ 28th (Thursday).—Canterbury, Colchester, and Isle of Wight (Ryde)
- „ 30th (Saturday).—Maidstone and Windsor.
- July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
- „ 4th (Wednesday).—Croydon, Ealing, Farningham, Hereford, Reigate, and Tunbridge Wells.
- „ 5th (Thursday).—Bath, Norwich, and Sutton.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Harrow and Wolverhampton.†
- „ 11th (Wednesday).—Brockham and Formby.
- „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
- „ 13th (Friday).—Ulverston.
- „ 14th (Saturday).—Manchester, and New Brighton.
- „ 17th (Tuesday) Carlisle.
- „ 18th (Wednesday).—Cardiff.*
- „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
- „ 21st (Saturday).—Newton Mearns.
- „ 24th (Tuesday).—Tibshelf.
- „ 25th (Wednesday).—Newcastle-on-Tyne † and Belfast.*
- „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

Feeding Roses.

RECENT copious rains have benefited Roses to a considerable extent, not only by washing and cleansing the foliage from dust, and assisting in freeing them of insects, but by moistening the soil. This renders the application of stimulants of greater benefit, as the special constituents of the manure applied are more readily held by the soil when the latter is moist and the roots have access to it as required, assimilating it into the root system and soon distributing it throughout the tree or bush. At the present time the demands of Roses are important. The large extent of foliage is constantly giving off watery vapour. In hot, dry seasons it is extremely trying for the Roses, especially if the soil should be poor and the roots are not able to abstract the food so much needed for the purpose of maintaining healthy growth. During the time, therefore, that moist weather prevails liquid manure may be applied, provided the soil is duly moist below. Farmyard liquid manure contains all the elements needed by plants, and generous doses given at brief intervals will greatly improve the vigour of weakly trees or bushes, promote the fuller development of buds in ordinary healthy bushes, and assist the superfluous energy to expend itself in the production of stout growths for the succeeding year. Much depends upon the vigour and health of bush, standard, and climbing Roses during the period of full growth, and every endeavour should be made to maintain a steady and continuous improvement throughout that period. In helping a Rose to develop its flower buds in the best possible manner it is obvious that benefit accrues in other ways. For instance, regular moisture promotes a satisfactory growth. The foliage plumps up and does better work which, reacting upon the roots, induces that desirable vigour indicating health.

Wall Roses often deteriorate, not so much from lack of good soil as from insufficient moisture in it, whereby the plant food may become available. Considering the importance of moisture at the roots as one of the chief means by which plants feed, it will be seen that feeding does not always consist of applying liquid manure or solutions of special chemical manures; but that before using these aids, going probably to expense and trouble in securing a supply, a copious application of clear water may prove the better treatment. It at least prepares the way for richer and more stimulating diet, but of itself it is food, and has the power to render soluble important elements locked up in the soil. Use plenty of water, therefore, in the first instance, or wherever it is found that roots are ramifying in dry soil. Roses on walls are especially liable to suffer from poverty of moisture. This can invariably be detected by the character of the growth, which will be weak and short rather than vigorous and long. This applies to strong-growing varieties, not to the naturally small and weak growers. Healthy growth, however, always asserts itself. On indifferent growth insects readily find a footing, and spread with remarkable rapidity. They should be destroyed or displaced by copious syringing.

A mulching over the roots after the soil has been moistened has the effect of preventing the speedy escape of moisture from the surface, and if the mulching consist of manure of a rich juicy character some of the virtues contained in it must be washed to the roots by the watering and syringing carried on. The mulching will also hold the water until it has time to percolate into the soil. On bare hard ground water runs off quickly, and if not mulched it should be pricked up with a fork. Nothing can be better than the drainings from stables and farmyards for Roses, but in many cases it is not easily attainable, hence recourse must be had to some means of preparing a suitable liquid. A rich liquid may be formed with a peck of any animal manure, such as horse, cow, sheep, or fowl manure, placed in a bag and sunk in a tub holding 30 gallons of water. Let it soak for a few days, stirring frequently, and apply undiluted. A similar quantity of soot placed in a bag, and treated to the same quantity of water, stirring in a spadeful of lime, and allow the mixture to clear, forms an admirable stimulant, improving the tone of the foliage, and increasing the colour in the blooms. Of chemical manures, superphosphate may be applied, dissolving half an ounce in a gallon of water, and apply weekly to Roses outdoors during the summer. It may be varied with sulphate of ammonia or nitrate of soda, each half ounce to the gallon of water, but use them separately. The advertised artificial manures are good, and may be used in solution at the rate of 1 ounce to 2 gallons of water, applying weekly. Sulphate of ammonia and nitrate of soda ought not to be used too frequently. Their action is very stimulating.—ROSARIAN.

Propagating Roses by Cuttings.

THE propagation of the tenderer and choicer varieties of Tea and Noisette Roses by cuttings is an admirable way of increasing stock. Small side growths having well formed leaves and partly ripened wood form good cuttings. They should be taken off the plant with a heel of the old wood attached. Growth that have flowered make suitable cuttings, as the wood is usually in the right condition, being neither too sappy nor too hard. The cuttings may be 3 or 4 inches in length, and should have at least two leaves above the soil when the cutting is inserted. In the first instance the cutting will have three leaves, but the bottom one must be removed and insert to the next leaf, that is, place the cutting to such a depth that the leaf will rest upon the soil. Four or 5-inch pots are a suitable size for the cuttings, which are best placed round the edge, four to six cuttings in a pot.

Drain the pots efficiently with a few crocks and some turfy pieces over them to maintain the drainage free and carry away superfluous water: equal parts of loam, leaf soil, and sand should form the compost. Place this material firmly in the pot, surfacing with sand and dibble in the cuttings, taking care that the base of each reaches the bottom of the hole. After inserting, give a good watering and place the pots on a moist base in a greenhouse, covering with a bell-glass, or in a box or frame which can be kept closely covered with glass until roots form. Shade will be essential to prevent the leaves flagging, also frequently sprinkle in order to maintain them fresh. Dispel damp by giving air occasionally, and wiping the inside of the glass.

Where a little gentle bottom heat is available cuttings of Roses will root sooner, though it is a good plan to place them first in a cool place, so that the base of the cuttings develops a callus, then with the stimulation of bottom heat roots will quickly be formed; but they must of course be kept close and shaded. Single joints of well ripened young wood may be propagated readily by this means. The gentle, regular heat and moisture of a Cucumber or Melon frame is most suitable. When roots form pot the plants singly, and return to the frame until established, after which gradually harden and grow in a cool greenhouse. The hardier varieties of Roses are easily propagated by cuttings of ripe growth inserted on a sheltered north border or in a frame in autumn.—H. T.

Small Fruits on Espaliers.

WHEN one considers how little room Gooseberries, Currants, and other small fruits occupy on espaliers, and what excellent fruit is produced, one begins to wonder why Apples and Pears are so almost universally grown thereon to the exclusion of the more suitable fruits named; for there can be no question that to select proper varieties of Apples at least, to plant and tend them, and keep them in thorough health and bearing on espaliers, is more difficult than most gardeners care to own.

The man who contentedly pinches his shoots in summer, snips them back in autumn, and is satisfied as long as the trees are young and vigorous, thinks it is very easy, and if he fails to get fruit on some of the finest Apples in existence when treated this way he calmly blames the season and thinks no more about it. But let any thinking gardener watch trees of, say, Cox's Orange Pippin when they are growing, and again when they have nearly filled their allotted space,

let him note the younger portions of the tree with its fine spurs and fruit, and contrast it with those parts that have been closely pruned for a year or two, and it will probably lower espaliers in his estimation, especially if the trees have been treated on the orthodox rule-of-thumb principle.

Now it is a matter of no small moment to have to root up as unprofitable trees that if judiciously treated would be just at their prime, and while I would not go so far as to condemn espaliers for these fruits entirely, I am sure we have far too many of them. There is not one variety out of three that is really suitable for growing as restricted trees, and a year or two of neglect even of these will cause them to fall into such disorder that many years of careful treatment are necessary to restore them.

Had these been trained on a fair system a little neglect would not so much matter though no system will stand it for long. I would like then to recommend anyone who wishes to make the utmost use of their resources to plant fewer Apples and more Gooseberries and Currants in any position where espaliers are necessary or can be used. A Gooseberry espalier tree on each side of a walk some 40 yards long has been planted about four years, and I have never had

cause to regret planting it. The amount of fruit that can be gathered is out of all comparison with that of bush trees when the quantity of ground is considered.

The quality of the fruit too is always the best of its kind, the finely flavoured choice dessert varieties coming to a size and development quite unattainable on bush trees. The roots are easily got at for all purposes of culture, and the fruit has the benefit of air and light to the fullest extent. As an instance of improvement in flavour I would mention that fine variety Telegraph. On bush trees as a rule it is not of the best quality for eating, but well ripened on trellises it is above the average and good enough to go anywhere.

Gooseberries on espaliers have the distinct advantage over wall trees that they are no more trouble to keep free of insect pests than when on bushes, rather the reverse, while on walls they are frequently eaten up with red spider, especially should the position be a warm one. Late fruit of such varieties as Warrington may be readily protected from birds, and the fruit at all stages is easily gathered. Thinning for preserving is therefore an easy matter.

Turning to Currants much the same benefits accrue, very fine and splendidly finished fruit following well considered culture. In this connection it may be well to note that when the fruit is expected to hang late in the season it is not advisable to pinch the breastwood too closely. I am referring more particularly to red varieties. The additional leafage is an advantage, as it serves to keep the fruit a little cooler under a hot July sun, and by ripening slowly, it develops fine colour, size, and flavour.

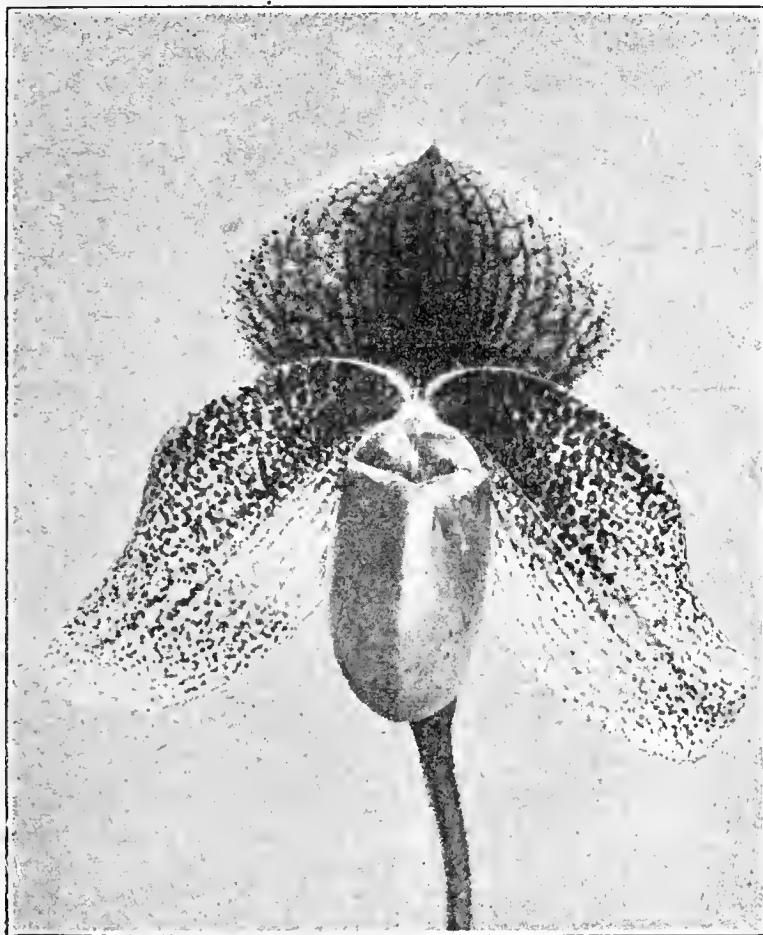


FIG. 134.—CYPRIPEDIUM CHAPMANI MAGNIFICUM.

Espaliers for Currants and Gooseberries may be taken to any reasonable height, according to individual circumstances, from 4 feet to 5 feet being a useful height for ordinary purposes. For anything above 4 feet I prefer an upright method of training, a shoot being taken along the lowest wire horizontally, and others run up from it at intervals of 9 inches. Thus trees planted at 6 feet 9 inches apart will have four upright branches on each side of the central shoot, and this is enough if the trellis is to be covered in a reasonable time.

Overcropping while the trees are filling up should be avoided, as it is apt to weaken the growth; but if properly fed from the surface by means of top-dressing with farmyard manure, very fine fruit may be taken during the first few years. As to the trees to plant, those in the second year from the cutting are best, and if ordering from a nurseryman it is well to say for what purpose they are required. Three shoots only are needed; the centre one should be shortened to a foot or less, the side ones an inch or two beyond the place where the first upright shoot is to be taken, provided of course the trees are strong enough to allow of this.

If weak cut back all three of the shoots to a few eyes, as it is only waste of time to leave in wood that is undeveloped, and consequently will not break strongly. In the formation of the branches "make haste slowly" is an excellent maxim. Pinch the upright shoots at every wire, and the horizontal branches at every foot. This will prevent having to cut away useless wood at pruning time, and insure a well-balanced flow of sap. It is well, too, to pinch the former a day or two in advance of the latter.

I am not an advocate for very close pruning in the case of these espaliers, for as mentioned the extra foliage is an advantage; but, then on the other hand, if the trees are allowed to get too thick the whole advantage of the system is lost, as this latter consists in a great measure in the freedom with which air and light play about the growth and fruit. A very light and cheap trellis will suffice for the purpose. In my own case I have six wires at intervals of 9 inches, with light iron standards at about 10 feet apart, also a straining post at each end. I have not the exact cost by me now, but I know it was not much more than 1s. per yard run for material, and any handy labourer can fix it. The whole should be painted a couple of coats, and if the wires are tightened occasionally by means of the ratchet arrangement on the straining posts, the fence will last for an indefinite time.—
H. R. RICHARDS.

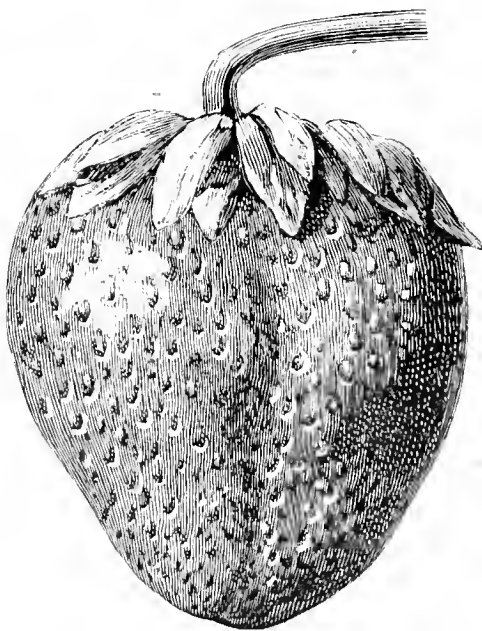


FIG. 135.—STRAWBERRY TRAFALGAR.

Strawberry Trafalgar.

THOUGH many new Strawberries have come to the front during the past decade, none has caught the popular fancy to such an exceptional degree as Royal Sovereign. A few years after its introduction and while the stock was yet comparatively expensive, it was being grown on every hand, until at the present moment it would probably be a difficult task to find a garden without Royal Sovereign, or a market grower who did not consider it one of the best varieties in cultivation for early use. On its introduction the late Mr. Laxton considered it the best early variety he had raised, and such it has undoubtedly proved itself to be. Now Messrs. Laxton Bros. bring forward Trafalgar and say that "it promises to make a useful market as well as table fruit, as it is equally as good at the end of the season as Royal Sovereign is at the beginning."

At the Drill Hall on Tuesday, June 5th, when Strawberry Trafalgar was exhibited by the Bedford firm, it was recommended for an award of merit by the Fruit and Vegetable Committee of the Royal Horticultural Society, and the illustration (fig. 135) represents a typical fruit. The variety resulted from a cross between Latest of All and Frogmore Late Pine, and the habit—robust yet compact—is intermediate between the two parents. The plant is a free producer of

large to very large pointedly conical bright scarlet fruits. The flesh is white, firm, and richly flavoured. The leaves are often five-lobed, and are smooth and leathery, with a downy footstalk. The plants staged on the occasion named carried a heavy crop in various stages of development, but the flavour though, as has been said rich, was not so luscious as it will be when the plants are grown under the more natural conditions that suit the late fruiting Strawberries so well.

The Gardener's Assistant.

THIS, the first volume of a series, professes to be in some sense a continuation of "Thompson's Gardener's Assistant," of which three editions have already appeared, in 1859, 1878, and 1884 respectively. While, however, acknowledging its indebtedness to Mr. Robert Thompson of Chiswick, and the late Mr. Thomas Moore of the Chelsea Botanic Garden, for the basis of the idea (viz., a comprehensive treatment of practical horticulture for professional gardeners), it is so far as this present volume goes almost an entirely new work. On comparing it with the older editions the fact becomes at once apparent, and upon turning to the preface it is admitted by the writer himself.

But while every change in modern literature and journalism cannot be regarded as making necessarily for good, there is no denying that in this case the presiding genius of the undertaking has in every respect advanced upon his models; and this is noticeable not merely in latter-day points connected with science, such as cross fertilisation and hybridisation (in which a new school of specialists is arising), or in the matter of recently introduced novelties, or even in respect of *Orchidomania*, of which there is a premonition promising greater glories to come. To speak exactly, except in the department of tools and instruments, very little of the original work remains. Neither in style, treatment, nor arrangement are the old models preserved or imitated, and the result is that we meet with an improvement on every side.

Clearly the English scientific mind is emerging from the dry-as-dust stage and condescending to simplicity. It may be a sign of degeneracy in us that we cannot emulate the feats of our grandfathers, who devoured the leading articles of "The Times," drank port wine *ad libitum*, and perused patiently the black-letter law books or the philosophical reflections of Sir Thomas Browne. In matters intellectual, as in matters mechanical, the earlier tendency is towards overloading and complexity, the later towards neatness and lucidity. And this applies not only to ideas, but also to language, so that while the amount of our store of knowledge has increased the length of our sentences has declined.

Of these tendencies the present volume is a striking example. If it has not exactly constructed a royal road to the goal at which its readers aim, it has at least so macadamised and rolled the path that the readers will not be unnecessarily impeded upon their journey. Whether it be the question of the calendarial operations, or of descriptive and physiological botany, or of the fascinating subject of hybridisation, or of garden entomology (which is delightfully treated), or of "garden friends," or of the chemistry of garden soils, and of manures, one is impressed with the ease, the clearness, the compactness, and the general "modernity" of the treatment and the information. Moreover, it is no small recommendation that the authorities for much of the knowledge embodied in its pages are still alive, and have had a direct or indirect influence upon its production. It is beautifully illustrated (often in colour), and is in every way more in the nature of a work for perusal than for reference. Amid the torrent of imported works we have here an ample vindication of the practical and yet flexible character of the national intellect, of which we may be proud.

The Cider Making Industry.—We are informed that an International Congress respecting the cider industry is to be held in Paris from October 11th to 13th. The organising committee appeal to pomologists, growers, and authorities of all countries to give the conference the benefit of their knowledge and experience as regards the following questions, which are proposed for discussion:—1, Raising and planting Apples and Pears for cider and perry. 2, Principles on which to form a selection of the best varieties of fruits for wine or cider. 3, Experimental orchards and stations. 4, The teaching of fruit growing. 5, Drying and preserving wine fruits. 6, Use of yeasts in cider making. 7, Extraction, filtration, sterilisation of must. 8, The spirit present in cider and perry. 9, The cider and cider Apple trade in France and elsewhere. All communications in connection with the conference should be addressed to Mons. Jourdain, 21, Rue Mayet, Paris.

* "The Gardener's Assistant." A new edition by William Watson, assistant curator, Royal Gardens, Kew. The Gresham Publishing Co., 25, Farringdon Avenue, London, E.C.

The Kew Rockery.

THERE is probably no outdoor section of the great national garden at Kew that is such a perennial source of interest as the charming rock garden. No matter when a visit is made thereto many plants will be found in flower, and some of them will have such beauty as to warrant their purchase for the home rockery. If, however, the inspection is made in a time of plenty, the treasures will be so numerous and so varied as to preclude the possibility of the inclusion of them all in a limited space. The varied interest that attaches to the Kew rockery makes one wonder why more rock gardens are not found on all the estates of the affluent. It must be understood that by rock gardens is here meant a portion of ground set apart with stones properly arranged, so that the plants placed in the chosen positions will luxuriate, and not, as is too often seen, eke out a living death. There is a vast difference between a rockery or a rock garden constructed on rational lines, and with due consideration of the habits and require-

ments of the plants in flower than during the spring and early summer months, and at the present moment it is singularly rich in its diversified charms. Plants of all sizes producing flowers of all forms and colours are to be seen literally by the thousand, and the visitor cannot go 3 feet without seeing a dozen plants of the choicest type of beauty. First one pauses to admire the stately spikes of *Eremurus himalaicus* towering on the summit of the bank, and then stoops to examine the flowers of some miniature gem whose height may not exceed a couple of inches. A flowering shrub that demands attention is *Rubus deliciosus*, whose green leaves and chastely beautiful white flowers make a most attractive picture. When it is seen in such excellent condition as this, one wonders why it is so seldom grown in gardens; it is certainly equally as worthy of inclusion as many that now have a place. The bright yellow of the Spanish Broom shows up well from the grey background of the stones and the green of the neighbouring plants; while *Cytisus purpureus*, if less showy, is very beautiful and meets with many admirers. Standing up prettily on a easy ledge can be seen *Galax aphylla* (*Blanfordia cordata*), the heart-



FIG. 136.—THE ROCKERY AT KEW.

ments of the future occupants, and one in which the stones and rocks are thrown up irrespective of the wants of the plants that are expected to adorn them.

It will be conceded by every reader of the *Journal of Horticulture* who has had practical experience in the matter that there is no phase of gardening that is more difficult to manage than the formation of rockery. So many details have to be considered which involve many hours of careful study, that gardeners are, as a rule, only too pleased to hand the task over to a specialist. This is undoubtedly the best thing to do, but it is, unfortunately, not always feasible or desirable. Where such is the case intending rockwork builders will do well to journey to Kew and study closely the lines that were there adopted, and which have proved so signally successful. If they do this, and take copious notes, they will find the task they have set themselves much easier, while the results they will attain to will be far more satisfactory.

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In a delightfully cool-looking corner, and springing from what at first glance is apparently the facing of stone, is *Rhombola pyramica*, the flowers of which always remind the writer of those of *Saintpaulia ionantha*; this looks particularly attractive, as also does *R. p. alba*. The flowers of the latter are precisely similar to those of the type, except that they are white in colour. When the two varieties are seen side by side, as at Kew, their beauties can be fully appreciated. In those positions suited to their requirements *Ribes* are comparatively numerous, but the only one noted in flower was *R. Douglasianum*, a dwarf-growing plant, that can scarcely lay claim to universal cultivation. Near by some magnificent plants of *Cypripedium spectabile* promise to produce an abundance of flowers in due course, as in fact do other hardy *Oreobala*.

Truly regal are the great clumps of *Osmunda regalis*, which even

at this early period of the year have fronds upwards of 4 feet in height. A rockery without Saxifragas would scarcely be worthy of the name, and at Kew there are many in full flower. Some produce minute blooms that almost require a magnifying glass to show their charms; while others have bold leaves and strikingly handsome flowers, whose effectiveness can be appreciated as well from a distance as at close quarters. Then, too, there are Geraniums, Dianthi, Lychnis, Phloxes, and a host of others that cannot be named at the present moment; a few have been chosen, and they must suffice for the time, and others will be enumerated as the season advances.

The Rhododendron dell is now just passing its moment of greatest beauty. The plants, large and small, have flowered magnificently, and the cool walks have proved a constant source of attraction to visitors. The hardy Azaleas have been superb, and the large plants have been literally smothered with blooms. An immense bed of Lilacs has taught many a useful lesson as to the seasons of flowering, while the various Laburnums have proved to demonstration that all the varieties at Kew are not good. In one place we see a tree bathed in golden chains, and in another a specimen that over its whole extent of branches had not more than a dozen puny racemes. But we will return to Kew again.—F. W. H.

Tuberous-rooted Begonias.

TUBEROUS rooted Begonias have, during the past few years, been making steady progress in the flower garden, and they are admitted by all who have attempted their culture in open beds during the summer and autumn months to be unique. It is a step, too, I feel sure, in the right direction, as by its adoption we see less of the vivid glare which has too often occupied the greater part of many summer beds. The formality of the design, too, is somewhat avoided, for happily we cannot pinch and pick, in other words mutilate the Begonia so as to form it into any set design, so that it must be allowed to grow naturally to see it in perfection. When thus seen they may be said to constitute one of the most enjoyable floral arrangements which any garden can contain. The Begonia delights in a free, light, sandy, and fertile loam, and commences flowering almost from the first joint, continuing successively to produce its many coloured blossoms till checked by autumn frost. Those who desire an attractive bed should never select the huge-flowered varieties, which are better for pots in the conservatory, or for exhibition.

The simplest means of obtaining a stock of Begonias is from seeds, which is easily managed provided the following rules be adhered to. Firstly, the soil, when the seed is sown, should be sufficiently dry to pass through a sieve of three-eighths of an inch mesh without clogging, then three parts fill thoroughly drained pots, making the surface even and very firm, sprinkle a little white sand on this to mark where the seed falls, and thus avoid sowing too thickly, in which case many decay. Secondly, after sowing the seed scatter very lightly from a wire gauze sieve (or if this be not at hand the fine rose of a watering can I have found an excellent substitute) a little dry silver sand, so as to barely cover the seeds, after which plunge the pots or pans in slight bottom heat, say about 60°, and cover with a piece of glass. If the soil is in the right state they will not require watering for three or four days, keeping the pots at this stage quite dark, as by so doing watering is dispensed with, for after all the watering pot is the greatest enemy in the raising of Begonias from seed.

The seed should be barely covered; in fact some growers do not cover it at all. I have frequently adopted the same practice with equal success; but knowing the great losses attending the injudicious use of the watering pot, I nearly always cover it as above described, and thus avoid the seed being displaced when vegetating, which is sure to end fatally. Watering, I may observe, should never be done till the seedlings have their second leaf. What appears to suit the seed best, and which falls very lightly on them, is the spray from the syringe given at a distance, and settling on the seed pots much as a thick misty rain. Thirdly, when the seedlings are up always avoid incessant sprinklings over the foliage. This is highly detrimental and often fatal to them, consequent upon their extremely succulent nature at this time. When they have reached the second and third leaf a lighter position near the glass will suit them, where they will soon make headway and be ready for planting, having been thoroughly hardened previously, and of course pricked off into boxes or pans in the usual way of small seedlings.

The other means of increasing this section of Begonias to which I shall refer is by cuttings. It is by this means that the best forms of singles and all the doubles are propagated, and which can only be performed where good tubers exist, capable of throwing up several strong growths. In adopting this method, and to avoid overcrowding and the consequent damping off, the cuttings should be inserted singly in small thumb pots, using rough fibrous leaf soil and plenty of sharp grit, passing all through a half-inch sieve, well rubbing the fibre through. The soil ready, the next thing is the cuttings, and this is

how I get them:—Taking half a dozen 3-inch pots and as many labels, I select the strongest and forwardest plants, having cuttings 3 or 4 inches long; these I detach with a sharp knife close to the tuber, securing where possible a slice of bark and a heel as well to the cutting.

Such cuttings as these are almost sure to form roots readily with judicious management. Those, however, that cannot be obtained in this way should be taken off as close to the tuber as possible, and where the naturally succulent growth is somewhat firmer. These latter, though by no means difficult to root, require the greater care. Having filled half a dozen pots, take them to the potting shed, potting them singly and labelling each one, defining the singles from doubles by placing the first letter of each word on the label as the case may require. When all are complete, plunge them into bottom heat of 60° or 65°, but on no account water them for the first two or three days.

It is the orthodox practice to water cuttings newly inserted at once, and, generally speaking, with softwooded plants it is the right way to prevent flagging. The Begonia, however, is extremely succulent, the stems being capable of sustaining themselves for days, even in a cutting state, without water, and sometimes longer, provided they are plunged in damp cocoa-nut fibre refuse and kept comparatively close. By the third or fourth day the cuttings will have begun to heal; in other words, be in the first stage of forming a callus. When this stage is passed the danger is considerably lessened, and presuming the soil is dry on account of the heat in the propagating house, a good watering may be given, leaving the lights off for three or four hours till the foliage is quite dry.

This watering under the circumstances I have described should last them five or six days, according to the weather at the time, after which all that are dry are best taken out singly and watered, for it is not an easy matter to direct a volume of water to any particular pot in the propagating case without wetting others. By taking them singly as described, each may be watered effectually without damping a leaf, a thing to be desired when propagating these Begonias from cuttings. After the tenth day air may be admitted by degrees, according to the progress of the cuttings, thus keeping them short and of sturdy growth, as, by being essentially greenhouse plants, they soon become drawn and weakly if kept too warm or too close. In three weeks or a month the majority will be well rooted, and having been exposed in the house for a few days may be placed in 4-inch pots. These will carry them through the first season, one of the chief points being to secure a sound tuber by the autumn.—F.

Notes on Figs.

EARLY forced trees require generous treatment after the first crops are gathered to enable them to swell the second crop. Syringe twice a day to keep red spider in check, employing an insecticide if necessary, but not such as will discolour the fruit, which is easily done by any corrosive substance, and frequently by rubbing with the hand. Afford liquid manure when watering is necessary, trees in pots requiring it daily, sometimes twice a day; and trees in borders once or twice a week, according to the extent of the rooting area. The second crop should be thinned before the fruit is the size of Walnuts, and in thinning reserve the largest at the base of the shoots. Trees in pots require top-dressing with rich material, malt culms added to loam being excellent, supplying a little fertiliser occasionally. Planted-out trees should be mulched with short, sweet, lumpy, partially decayed manure about an inch thick, renewing from time to time, so as to maintain that thickness.

When the fruit on trees in succession houses commences to ripen a free circulation of air must be afforded, and it should be warm, as cold air-moisture settles on the fruit and may cause decay or result in "spot." Attend to tying-in and regulating the shoots by thinning and stopping, so as to afford the fruit the benefit of all the light practicable. The moisture in the atmosphere will need to be moderated, not wetting the fruit, though if red spider attacks the trees the fruit should be gathered rather closely and a good syringing given, which will not injure the remaining fruit provided it is done early on a fine day, so that the moisture does not remain long on them. Do not allow any lack of moisture at the roots, yet guard against excessive watering, affording lessened supplies of water than when the fruits are swelling.

Trees for next year's early forcing in pots must not be neglected in any cultural essential or disappointment will be the consequence. They must have all the light possible, and be kept as near the glass as practicable, without touching, so as to secure sturdy well-ripened growth, keeping them clean by syringing and the application of an insecticide if necessary, and affording liquid manure to effect a stout growth. Suckers must be removed, keeping every plant to a single stem. When the growth is completed the trees may be stood outdoors in a sunny spot to induce rest, but the wood must be well ripened previously, and the sooner the better for early forcing. If any fruit shows it should be removed. This will not prejudice but favour the formation of bud Figs in embryo for producing the first and most valuable crop another season.—GROWER.

NOTES & NOTICES

Recent Weather in London.—Both Saturday and Sunday were brilliantly fine, and though gardeners would appreciate some steady, warm rains, farmers round London hope for continuous warm weather, as such will favour the newly mown hay. On Monday the heat was intense, the maximum shade temperature reaching 88°. On Tuesday morning there was a heavy rainstorm with some thunder, but it continued very close afterwards. In the evening there was a slight return of thunder with rain; Wednesday opened cooler.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, June 19th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Aquatic Plants," by Prof. G. S. Boulger, will be given at three o'clock.

Fruit Growing in England.—In spite of the increased facilities enjoyed by the foreigner in the shipment of fresh fruits to the markets of the United Kingdom every year, it is satisfactory to see that the English fruit grower more than holds his own against all comers. From the Government returns, it appears that the acreage devoted to fruit in Great Britain now exceeds 229,000 acres, and the extension bids fair to assume large proportions in the near future. Kent and Worcester at present take the lead as regards recent developments in this home industry. The output of Cherries, Apples, and Strawberries, particularly from Kent, is now enormous. The great increase in Worcester relates to Plums, Strawberries, and Gooseberries.

Crystal Palace Fruit Show.—The schedule of this the principal exhibition of British grown fruit, held annually in the United Kingdom, is before us, and remains substantially the same as in former years. The dates chosen are September 27th, 28th, and 29th, and it is hoped that the show will prove as signal a success in all respects as its predecessors have done. There are classes for practically all kinds of fruits that can be produced in the British Islands at that period of the year, and as in former schedules the small grower has abundance of opportunity to annex prizes in some of the smaller classes. There are sections in which of course only the large grower can show, but this does not necessarily exclude others entirely. Entries close on Thursday, September 27th, and intending exhibitors may secure schedules and other necessary information from the Secretary Royal Horticultural Society, 117, Victoria Street, London, S.W.

The Death of the Earl of Radnor.—By the death of the Earl of Radnor, which occurred on the 3rd inst., horticulture generally, and in the south-west in particular, has lost one of its staunchest supporters and most noble patrons. His lordship and the Countess of Radnor were ever ready to promote and help forward in every possible way any scheme for the advancement of horticulture, especially so amongst the cottagers and poor in their immediate neighbourhood. The beautiful demesne at Longford Castle affords abundant evidence of their devoted love of horticulture, and of the exquisite taste displayed in effecting the numerous improvements made there recently. The deepest sympathy is felt by everyone connected with horticulture towards the bereaved countess and the family in their sudden and severe affliction, intensified, as it now is, by the serious illness of the present earl, who so nobly left his home at the call of duty to fight for the empire.—T. C.

Mr. Peter Barr in New Zealand.—Some New Zealand papers to hand show that in April of the present year Mr. Barr, after his peregrinations in China and Japan, was enjoying himself among his kith and kin in the far away antipodes. He appears to have been lionised by the municipal authorities of Christchurch and Dunedin, and largely engaged in teaching them how to improve their public parks by way of making them more beautiful and enjoyable, after the manner, in some respects, of the parks of London. He seems to have been shocked by the prevalence of Lombardy Poplars, for he says:—"All over the place you have abominable Poplar trees, and they should be ruthlessly slaughtered. On the other hand you have the beautiful Weeping Willow, which is in itself a charm. Alongside a river it is the loveliest tree in creation. I refer to the Babylonia. It makes a beautiful landscape. These Weeping Willows are one of the great beauties of Christchurch."

Horticultural Club.—The usual monthly dinner and conversation of this Society will take place on Tuesday, June 19th at 6 P.M. The subject which has been put down for discussion is the "Clematis," and it will be opened by a paper of Mr. A. G. Jackman.

Inner Temple Gardens.—We learn that by permission of the Benchers the Inner Temple gardens were opened on Monday last, and will be open each week-day during the summer months from 6 P.M. till dusk, for the benefit of the children in the district. This is a privilege that will be immensely appreciated.

Ash and Box from Albania.—It is stated that these trees are now being raised in a regular manner in Albanian nurseries. Until recent years these have been used solely as fuel, and never exported as building wood, for which purposes Ash timber especially has considerable value for use in the interior of buildings. Boxwood, of large size, for the use of the engraver, is always a marketable commodity in Europe, and a new source of supply will be heartily welcomed.

Rhododendron Sunday.—Last Sunday is known as "Rhododendron Sunday," and the public were admitted to view the wonderful collection of these beautiful plants in Earl Darnley's Park at Cobham, near Rochester. Cobham is within an easy walk of Rochester and Gravesend, and both park and village are ideals for the artist, the admirer of the picturesque, and the thousands of lovers of the creations of the late Charles Dickens. The "Old Leather Bottel" has become a veritable Mecca for our cousins from the other side of the Atlantic, and its visitors' book contains a wonderful collection of distinguished names.

Bournemouth Pleasure Grounds.—Mr. Robert B. C. Scarlett, owner of the Shelley estate and the cliff frontage to the east of Boscombe Pier, on Wednesday, presented to the Mayor of Bournemouth for the town in perpetuity new pleasure grounds on the cliff front. The gift was originally made by the late Lady Shelley, but since her death Mr. Scarlett, her successor, has added to it by spending £1600 in laying out the site, and the Bournemouth Corporation spent a similar sum in providing shelters and seats, and other conveniences for the public. The grounds cover nearly 4 acres, and command magnificent views of Bournemouth Bay, the English Channel, the Isle of Wight, and the Purbeck Hills.

Amateur Rose Culture.—In the last issue of the "Rosarian's Year Book," Mr. R. E. West, the well-known and successful Reigate amateur, contributed an admirable article under the above title. This has now been issued in pamphlet form by the Surrey Seed Co., Ltd., Redhill, and having in view the fact that the whole of the information has been previously published, we are forced to the conclusion that the price, 1s., is too high. Had the pamphlet been offered at 6d. there can be no doubt that it would have had a vastly increased sale. Needless to say the information is most reliable, as it is the result of many years' practical experience in the production of the Queen of Flowers, both for exhibition and home adornment.

Gardening Appointments.—Mr. Robert Anderson, for the past fourteen years head gardener and manager on the estate of Capt. the Hon. A. E. Harris-Temple, Waterston, Athlone, and previously foreman in the gardens of his Grace the Duke of Buccleuch at Dalkeith Palace, and the Right Hon. the Earl of Rosebery at Mentmore, has been selected from upwards of 200 candidates to fill the responsible position of bailiff of Phoenix Park, Dublin, in succession to Mr. Wm. Dick, who retires after twenty-three years' service. Mr. James Tivendale, lately head gardener to Colonel Cosby, D.L., Stradbally Hall, Queen's Co., succeeds Mr. Anderson as head gardener to Capt. the Hon. A. E. Harris-Temple, Waterston, Athlone.

The Late Mr. R. D. Blackmore's Pear Garden.—The fame of this fruit garden, near Teddington Station, failed to secure purchasers when offered in moderate sized lots for building purposes last week by those able auctioneers, Messrs. Chancellor & Sons. Only a few low bids were made, but not a single lot changed hands. That may seem remarkable, considering that the ground is so admirably situated, being near the railway, and very close to Bushey and Hampton Court Parks, and the River Thames, and only about twelve miles from London. But the sale seems to have been hedged by conditions of so restrictive a kind that no one would make adequate offers. Most of the land has been planted a few years with Pear trees, and of the very best varieties, the trees being almost, if not wholly, of the pyramidal form. The plots had the advantage also of facing several well-made established roads.

Gifts to Gardening Charities.—We understand that the Welshpool Horticultural Society has been dissolved, and the surplus funds, some £200, divided amongst various charities. Through the kindly exertions of Mr. John Lambert, The Gardens, Powis Castle, the Gardeners' Royal Benevolent Institution has benefited by the distribution to the amount of £20, and the Royal Gardeners' Orphan Fund £10.

Royal Meteorological Society.—At the ordinary meeting, to be held in the rooms of the society, 70, Victoria Street, Westminster, S.W., on Wednesday, the 20th inst., at 4.30 p.m., the following papers will be read:—"Rainfall in the West and East of England in Relation to Altitude above Sea Level," by William Marriott, F.R.Met.Soc.; "Description of Halliwell's Self-Recording Rain Gauge," by Joseph Baxendell, F.R.Met.Soc.

Lectures at Chiswick.—Professor George Henslow, M.A., V.M.H., has kindly consented to deliver a series of four lectures in June and July to the students at Chiswick, and to any of the Fellows who like to be present. The lectures will be given in the Great Vinery at 8 p.m. June 20th, "Protoplasm: What it is, and How it Maintains Plant Life"; June 27th, "Protoplasm, the Instrument of Evolution among Plants"; July 4th, "The Phenomena of Germination"; July 26th, "The Uses of Leaves."

Bradford Horticultural Show.—The sixth annual exhibition of the Bradford Horticultural Society was held in the Drill Hall, Otley Road. The value of the prizes was increased to £56, and the entries have increased to more than 300. The quality of the exhibits, too, has improved, and a prettier scene than that presented in the hall it would be difficult to imagine. The principal exhibitors were:—Mr. John Brooke, Park Nursery, Heaton; Mr. W. Moorby, head gardener to Mrs. Knowles, Moorhead, Shipley; Mr. D. Wilson, Glusburn; Mr. T. Bell, head gardener to J. H. Rand, Esq., Baildon; and Messrs. Henry Clark & Son, Rodley. These divided by far the greater portion of the prizes. The much-coveted silver cup, presented by the Mayor of Bradford (Mr. W. E. Aykroyd), for the best group of plants staged for effect, was won by Mr. J. Brooke with a beautiful collection, in which Coleus, Palms, and Mosses formed prominent features.

Liverpool National Amateur Gardeners' Association.—A highly successful meeting was held on Thursday last in the Common Hall, Hackins Hey, Liverpool, under the presidency of Mr. A. W. Ardran, who expressed a hope that it would be a record year. Mrs. MacGregor took the prize for a lady's spray, and exhibited some fine Pelargoniums. Mr. Hoskyn, besides showing Pelargoniums, gained one of the president's prizes with a well flowered Petunia, and Messrs. Drake and Dodd took the other with some cut Cactus blooms. Mr. Robins won a prize for his Irises, and exhibited some magnificent Pansies, while Miss Francis won with three Viola sprays. The lecturer was Mr. R. Pinnington, of Roby, who gave short seasonable cultural notes on Gloxinias, Hydrangeas, Tea Roses, Oleanders (of which a very pretty spray was shown by Miss Hunter), Azaleas, and Zonal Pelargoniums for winter. A useful discussion ensued, in which Messrs. Muir, Tinsley, and Ardran took part, and a hearty vote of thanks was passed to Mr. Pinnington. It is hoped that the committee will arrange for a day's outing to Shrewsbury.

Bristol Gardeners' Association—The following papers will be read at meetings held at St. John's Parish Room, Redland, on the last Thursday in each month, at 7.30 p.m. June 28th, "The Culture of Strawberries in Pots," Mr. W. Staddon, Westbury-on-Trym. July 26th, "Sweet Peas," Mr. J. C. House, Coombe Nurseries. August 30th, "The Herbaceous Border," Mr. W. Ellis Groves, Redland. September 27th, "The Advantages to be Derived from the Study of Horticulture," Mr. J. H. Vallance, Redland. Prizes will be awarded on June 28th for a dish of Strawberries, not more than twenty-five; July 26th for six bunches of Sweet Peas, distinct varieties, six sprays in a bunch, shown with their foliage, and for six blooms of Carnations, distinct varieties, shown with their own foliage; August 30th for six single and six double blooms of tuberous Begonias, for six Peaches grown in the open air, and for six Nectarines grown in the open air; and on September 27th for two Ferns suitable for table decoration, in pots not more than 6 inches diameter. Certificates of merit will be awarded by the judges to exhibits considered sufficiently meritorious. Certificates of special merit will be awarded on the recommendation of the judges by the committee to exhibits of exceptional quality. The secretary of this flourishing society is Mr. W. Ellis Groves, Redland, Bristol, to whom all communications should be addressed.

Royal Botanic Society.—The first of the weekly promenades and evening fêtes at the Royal Botanic Gardens, Regent's Park, took place on Wednesday. The band of the 2nd Life Guards played in the grounds during the afternoon and evening, and a large number of Fellows and their friends enjoyed the beautiful grounds under most favourable conditions. At dusk the gardens were prettily illuminated. The fêtes will be continued every Wednesday, with the exception of June 20th, the day fixed for the special floral fête, until August 8th.

Heavy Thunderstorm.—A thunderstorm of exceptional severity passed over Northampton on Monday afternoon. Although lasting only twenty minutes it did extensive damage. Streets and houses were flooded, and hailstones as large as Walnuts broke hundreds of panes of glass. Conservatories, fruit trees, and flowers have suffered heavily.

Sussex Weather.—The total rainfall at Abbots Leigh, Hayward's Heath, for May was 0.68 inch, being 1 inch below the average. The heaviest fall was 0.22 inch on the 22nd. Rain fell on six days. The maximum temperature was 71° on the 6th and 28th, the minimum 35° on the 16th. Mean maximum 65°, mean minimum 42.07, mean temperature 53.53°—the average. Cold northerly winds have been much in evidence this month, but owing to the dry state of soil and atmosphere fruit bloom does not seem to have suffered much. If rain comes soon and warmer weather, there will be a good crop of all hardy fruits in this neighbourhood. We are ill-prepared to stand a dry June, the total rainfall for March, April and May being only 2.45 inches.—R. I.

May Weather at Belvoir Castle.—The wind was in a northerly direction sixteen days. The total rainfall was 1.86 inch; this fell on fourteen days, and is 0.50 inch below the average for the month; the greatest daily fall was 0.87 inch on the 8th. Barometer (corrected and reduced): highest reading 30.357 inches on the 29th at 9 p.m.; lowest reading 29.363 inches on the 3rd at 9 a.m. Thermometers: highest in the shade 66° on the 17th and 27th; lowest 27° on the 17th; mean of daily maxima 57.16°, mean of daily minima 40.96°; mean temperature of the month, 49.06°; lowest on the grass, 24° on the 17th; highest in the sun, 127° on the 27th; mean temperature of the earth at 3 feet, 48.83°. Total sunshine 151 hours 55 minutes, which is 35 hours 58 minutes below the average for the month. There were four sunless days.—W. H. DIVERS.

New York Weather and Roses.—We have been experiencing for a few days past the hottest weather on record for the month of May, the mercury having gone as high as 102°. The effect of this sudden jump to summer, on the cut flower product, can be imagined. The Roses, naturally, show the worst effects, and the quantity is such that even the prevailing job lot price of 2 dols. 50 cents a thousand is no temptation to the Grecian speculators. Everybody must make his bow to these indispensable gentlemen under present conditions, and nobody understands it better than the Greek himself. He is particular, says the "American Florist," as to quality at such times, and turns up his nose contemptuously at the lower grades of Roses. A little more of this torrid weather and there will be nothing to select from except lower grades, however.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
June.										
Sunday.. 3	N.N.E.	deg. 62.3	deg. 57.5	deg. 68.7	deg. 50.2	ins. —	deg. 56.1	deg. 54.1	deg. 52.1	deg. 50.5
Monday.. 4	N.N.E.	62.1	55.6	75.2	47.2	—	57.2	54.7	52.1	40.2
Tuesday 5	N.N.E.	56.2	51.5	62.0	45.7	—	58.7	55.5	52.2	40.1
Wed'sday 6	N.N.W.	55.6	51.6	73.5	47.9	0.04	59.5	56.1	52.3	43.5
Thursday 7	W.S.W.	59.7	55.1	66.1	52.9	0.14	61.2	56.8	52.6	49.5
Friday .. 8	W.S.W.	55.8	52.3	66.1	50.5	0.05	59.9	57.2	52.9	46.1
Saturday 9	S.S.W.	59.7	54.5	74.5	52.9	—	59.7	57.2	53.2	50.1
MEANS ..		58.8	54.0	69.4	49.6	Total 0.23	58.9	55.9	52.5	45.7

The weather has been bright and warm, the wind having changed from the north to a southerly direction during the latter part of the week. Showers fell on three days.



Carnation Mrs. A. Hemsley.

WITH reference to "W. S.'s" note, on page 463, the above Carnation was well known among growers a few years ago. It was raised at Mr. H. B. May's Dyson's Lane Nursery, Edmonton, about ten years back, when it was a great advance on any other crimson variety, and although further improvement has since been made the above is still grown to some extent. On June 21st, 1892, the Royal Horticultural Society's Floral Committee gave it an award of merit. Since the advent of Uriah Pike several other good crimson varieties have been raised from Winter Cheer crossed with the above varieties. Countess of Warwick I consider the best crimson with which I am at present acquainted. The flowers are well formed, with a good calyx, and of a bright claret crimson; it grows rather taller, but otherwise is of similar habit to Winter Cheer.—A. HEMSLEY.

Mr. Pearson's Election of Apples.

IN his remarks on this subject in your last issue Mr. A. H. Pearson mentions his regret that twenty-four out of sixty persons written to did not return him replies. I was one of the guilty parties, and rather glory in my reticence, seeing that Mr. Pearson so far forgot what was courteously due under the conditions of his application, to enclose a stamped envelope for the reply. The italics are mine, please note. Possibly he is a novice in Press matters, or otherwise he would have realised that the surest way to obtain replies is to enclose stamped envelopes with queries, even though he may not be asking questions that are of special interest to himself but are such to all fruit growers.

The Apple election provided by some thirty-one persons is not, I fear, of much value. To have a thoroughly representative election it should cover the whole kingdom, and be taken part in by at least 200 growers, each personally solicited—not by an individual, but by one of our influential gardening papers. My notion of an Apple election would be to first ask for lists of the best dozen of kitchen Apples and of dessert Apples for garden culture in bush or half-standard form. When the returns were in and tabulated, then the twenty of each section having most votes should be re-issued to the whole of the original constituency, and invite them to select from these scores the very best dozens. Then, when the results of this were tabulated, we should arrive at some definite conclusions as to which were the best Apples for the whole of the kingdom.—A. D.

MR. A. H. PEARSON has undoubtedly extracted some very serviceable Apples from his correspondents and published them on page 474 last week. That a condensation of varieties was needed many persons will freely admit, and also be obliged to Mr. Pearson for the start he has made. They will be also amused to find that there is one descendant extant of the old mystery men of the past who sold recipes for Auricula composts, killing lice, and making big Gooseberries. We must now look out for advertisements of his "valuable" selection of fortune-making Apples.

"Lectons is curus things, you never know what they won't do," observed a good and worthy worker in the fruit quarters after looking down Mr. Pearson's list. "What can you make of 'em," he went on to say, "when you find in the six standard Apples for cooking only two for summer sale, the rest late when the Americans are in?" On being told that there were three, he had the boldness to turn up his nose at Ecklinville because "it spotted so." He said, "The salesmen knew about it and put it out of their list, and besides they had four in, all earlies, that the growers left out of their six standards."

The critic was pointed to the list of "twelve bushes for cooking." "Well," he replied, he "didn't know they cooked bushes, but some of the sorts were good enough; it was a muddle all the same, as some grew three times the size of the rest, and a pretty show it would be if all were planted at the same distances; besides, there are too few earlies and too many lates in both cooking lists for money making."

Those are the views of a plain man who has had a good deal to do in his time both with raising and selling Apples. He admitted the late Apples near the top of the lists were as good as any, but was convinced they would not pay so soon or so well as the best of the earlies, as these had the markets to themselves "before the Yanks came in."

He did not think the table Apples far wrong, as all the lists nearly agreed, but would put Quarrenden before Blenheim as a standard for paying the sooner. On asking the man if he would make out better lists, he shook his head with the remark, "It all depends how you would plant, and how far apart for the trees for making the most

money off the land," and he muttered something as he went away about liking to know how Mr. Pearson would plant an acre if he had to buy other folks' trees.—A GLEANER.

Peaches for Market.

AS I have been growing Peaches and Nectarines for market for some time the article by "H. D.," on page 476, was of particular interest to me. That your correspondent is correct in his remarks anent the market I feel sure, as I have found no difficulty in disposing of my produce at remunerative prices. I am, as a matter of fact, so satisfied that the erection of a new range is in contemplation for the cultivation of Peaches and Nectarines, and I should be glad of the advice of "H. D." and other practical contributors on the following point:—I have a low wall about 100 feet long, against which I purpose placing a three-quarters span-roof structure divided into three compartments, or, perhaps, four; I thought of having a wooden front from the ground to the eaves, say 5 feet. Hitherto I have had to deal only with the regulation fan-shaped tree trained beneath the roof, but I am told that I shall find it more advantageous to adopt transverse trellises having the trees back to back. I learn that the system is practised and strongly advocated by Mr. Challis, of Wilton, and Mr. Summers, of Sandbeck. Now "H. D." does not refer to the method, but, perhaps, he will favour with his views on it, especially if he has had personal experience with it. I am much inclined to try the pot trees, and should be glad to know if they require annual repotting, and whether of Nectarines there is a variety superior to Early Rivers. If Messrs. Challis and Summers are readers of the Journal, perhaps they will say how many feet the transverse trellises are apart, and how far they extend into the house from the side?—LEARNER.

Potato Sets.

ON page 487 "Observer" makes an interesting reference to my notes on Potatoes, and the adoption of a course of planting small tubers for seed purposes. Deterioration from such a practice I had never anticipated, nor in the course of five or six years is there any signs of debility; indeed, my early Potatoes are this year as good as anyone could wish, and as vigorous as is desired. There is, too, a surprisingly good haulm growth from the small tubers planted this year, which promises to give as good returns, if not better, than in other seasons. Seeds obtained by this course is often a superior sample than would be had from a selection made from the everyday digging, and they have the advantage of remaining undisturbed until the whole is ripe. I should not have the least doubt about the result of a three or four years' test, suggested by "Observer," and I can unhesitatingly say that my stock of early Potatoes is better now than when they were first purchased, and in some varieties this extends to eight years. I know it is a favourite doctrine to decry small seed for ordinary planting, and for obtaining a normal yield this may be true, but for seed purposes such as I have adopted, I have not observed criticism, and I cannot recall an instance where the small tubers have been set apart specially for seed purposes, year after year. It is a mistake to allow such small tubers to remain unplanted until they are badly shrivelled. The earlier they are put in the better.—W. STRUGNELL.

The Oak and the Ash.

ONE of your correspondents in the *Journal of Horticulture* (page 483) says on the subject of the leafing of the Oak and the Ash, that "old traditions die hard." This is so, and I believe for the very good reason that they mostly contain a considerable amount of truth. Our ancestors were not such foolish persons as many people nowadays would seem to make them out to be. The rush of life being less, they observed Nature far more than their descendants do.

I have myself, in a general way, observed the relative times or dates of leafage of the Oak and the Ash for very many years, and have no hesitation in saying that they differ very considerably in certain seasons, and that, again speaking very broadly, the subsequent character of the weather bears a distinct relation to these differences. I cannot go so far back as C. W. Brown, in the "Daily Mail"—viz., to 1816, neither can I concur in his statement that the seasons after 1869 have been average ones. The year 1879 was probably the most disastrous wet season on record, and the "seventies" generally were wet. The year 1893 was a record dry year, and the last few years have, on the whole, been the same.

Now, in the "seventies," according to my observation, the Ash was regularly ahead of the Oak in leafing, and often by a very long way, but of late years the Oak has been as regularly ahead of the Ash. Of course, what is true of one part of the country need not be true of another, but I am speaking mainly of the southern half of the kingdom. I know that last year in the south the Oak was much before the Ash

in coming into leaf, and I also know that there the drought was abnormal. I also know that, leaving the neighbourhood of London on one day in August, with the grass so burnt up that a north country friend of mine inquired seriously how anything was ever kept alive in the south, I travelled to Northumberland, and there saw all the meadows with great round yellow patches on them where the grass has been temporarily destroyed owing to the hay "pikes" having been standing there so long on account of the wet. Whether there the Ash had preceded the Oak, or *vice versa*, I, unfortunately, did not ascertain.

No one, I suppose, believes that because one species of tree is in leaf earlier than another, therefore the season will be wet or dry, but I think it is not beyond the bound of possibility that the character of, say, a winter may bear some relation to the character of the subsequent summer, and that—especially in view of the fact that the Ash is a water seeking tree—the character of a winter may in some degree influence the time when different species of trees come into leafage.

"There are more things 'twixt heaven and earth
Than are dreamt of in our philosophy."

—A. H.

Bricks and Mortar or Land.

THERE are no doubt many persons who, having a certain amount of money to invest, ask themselves seriously whether speculation in bricks and mortar will be more profitable than land; they wish to do the very best they can for themselves, and generally, it must be added, choose the former. True, they may purchase land immediately contiguous to a fast-growing suburb of an important town, and either commence building themselves, or sell out as soon as possible at a good profit.

The condition of the Royal Horticultural Society is almost precisely that of the investor of capital—its council is between two stools, and it is greatly to be hoped will not bite the dust. If all the Fellows were of the same opinion as "An Old Fellow" (page 484) they would plump for a new Chiswick, and, to a certain extent, the air would be cleared. Such, however, is not the case, for amongst those scientists whom your correspondent goes out of his way to scorn are some men of keen business ability, and they favour bricks and mortar, not because as "An Old Fellow" suggests, they want to bring the society down from its present eminent position, but because they consider the horticultural hall in London would be more generally advantageous to horticulture and horticulturists throughout the kingdom. But as your correspondent has no reverence for the opinions of scientists, at any rate in this matter, I should like to remind him that there are many practical business men who favour the establishment of a hall. Of course it will be said that they do this because it will redound to their own benefit. Exactly, and the greater the number of them who can be induced to see the matter in this light the better, as they will then give more than moral support to the scheme.

In either case—whether we have a new garden or a new hall—I should like to ask where the money is coming from to make the purchase? The society has comparatively little money or assets, so, perhaps, the members of the council will make themselves responsible individually and collectively for any money that has to be raised? Or if, as has been suggested, the Fellows are to be approached with a view to securing their monetary assistance, I think they should have a further opportunity of expressing their opinions on the subject before the council commits the society to any definite scheme. As it is absolutely impossible to bring the whole body of the Fellows together at one vast general meeting, they must perforce be approached in some other way.

I do not know the precise number of Fellows, but I think it would be quite feasible for each one, in the British Isles at least, to be sent a reply postcard containing certain definite questions. For example, there might be the following:—

Are you in favour of new garden?

What will you subscribe towards its establishment?

Are you in favour of a new hall?

What will you subscribe towards its erection?

Each Fellow on receipt of this would draw his pen through the scheme he opposed, and write "yes" to the first question of the other, and the amount he would give to the second. This may be looked upon as proxy voting, but it is not really so; it is simply a whip-up from the council to the Fellows for financial assistance to one of two objects. The cost of the reply cards would not be great, and the labour involved would be more than repaid in the prompt settlement as to which alternative would be most acceptable to the general body of Fellows.

I am not one with "An Old Fellow" when he asserts the hall would only be occupied once a fortnight, and for the remainder of the year be useless. If we have a hall it must be erected with a view to securing the support of other arts and sciences; but these are matters that cannot be discussed at the moment. I am, however, convinced that with due consideration from an architectural aspect a building could be erected that would not cost much more for maintenance than the estimated annual outlay of £3000 on Limpsfield, if that site be chosen for the new Chiswick.—AUDI ALTERAM PARTEM.

Notes on Eremuri.

THE magnificent collection of these stately plants at the Drill Hall on Tuesday, 5th inst., must be my excuse for sending these notes. It is not suggested that they contain any particularly fresh information, but the culture of *Eremurus* may not be familiar to all the readers of the *Journal of Horticulture*, and the suggestions may therefore prove useful. Another reason for their production at this moment of high pressure in the flower garden lies in the hope that from their perusal other growers may be induced to cultivate a few, so that they may not suffer in the future from the unwarrantable neglect that has been their lot in the past. It cannot be claimed for *Eremuri*, as it can for some of our numerous border plants, that they will adapt themselves to every position. Their habit of growth is such that to put them in certain situations would not only mar the beauty of the *Eremuri*, but would also detract from the charm of the surrounding plants. For the back of a wide border, however, the upper terrace of a rockery, or even in the centre of a large bed, they are admirable, and might with general advantage be more largely employed.

I am unfortunately not able to speak authoritatively of the whole of the species, as I have only had practical experience with *E. robustus* and *E. himalaicus* (fig. 137); and superb as is the former, I think, all things considered, the latter is the better of the two. Whether it is the soil or the situation that does not suit the former I am unable to determine, but marked success has not attended my efforts with it so far. *E. himalaicus* has, however, done splendidly with me, and is now flowering magnificently. It produces its stately spikes each year, and with the exception of the very cold winter of 1894-5 it has not suffered materially. From what I saw of *E. Elwesianus* at the Drill Hall, I assume it is a variety of *E. robustus*; in any case it is exceptionally handsome. I have read in the *Journal* of one or two others that are worth growing, but unfortunately I have not a complete set, so that reference is impossible at this moment. It may have been in the same article, too, that, if my memory serves me rightly, there was a reference to the plants dying after having produced a spike, but I have not been troubled in this respect up to the present.

When we first procured a couple of plants, one each of those previously indicated, they were inserted on a warm border in the ordinary soil, which is very shallow. Though the specimens were fine ones they made practically no progress; in fact it may be said that they were unsatisfactory, but the reason was not apparent. Thinking carefully over the habits of the plants, and bearing in mind the thick fleshy roots they produced, the trouble was eventually ascribed to the poverty of the soil. Fortunately this was a condition of affairs that was easily remedied. We took out the mould to a depth of upwards of 2 feet and over a considerable area. In place of the old we put excellent loam, with the lower layer of which was mixed some decayed manure, and with the upper layer a little flaky leaf mould and very coarse sand; of course the passing away of water was insured before the good compost was put in. The result of this simple expedient has been most gratifying, especially, as has been said, with *E. himalaicus*, as the plants have never given us a moment's anxiety since.

At the outset elaborate preparations were made to guard against frost, as it was understood the plants were susceptible of injury at the tips during the late winter and early spring; but it was labour wasted. With the exception of a flower pot we now use no form of covering material, though what would be the result in the event of a severe winter I am not prepared to say. We have found a much more serious enemy than frost, and that is the slug. These pests are always voracious, but they appear particularly so when they reach the young growths of the *Eremuri*, for they will absolutely spoil them unless promptly checked, which my fellow gardeners will agree is by no means an easy matter. However, patient night work with a lantern during the critical period does wonders, and it is rare that any material damage is done. If they are left to their sweet will the plants are quickly ruined, a fact of which a friend has had conclusive proof.

I am looking forward to the time when specimens will be found in many gardens. Generally speaking the plants are comparatively new, and as consequence have been almost prohibitive in price, but now that larger stocks are being worked up it is hoped that the reduced cost will be the signal for very greatly increased cultivation. They are worthy of every care, and in comparison with some plants that could be named they present scarcely any difficulties to the enthusiastic cultivator.—W. R.

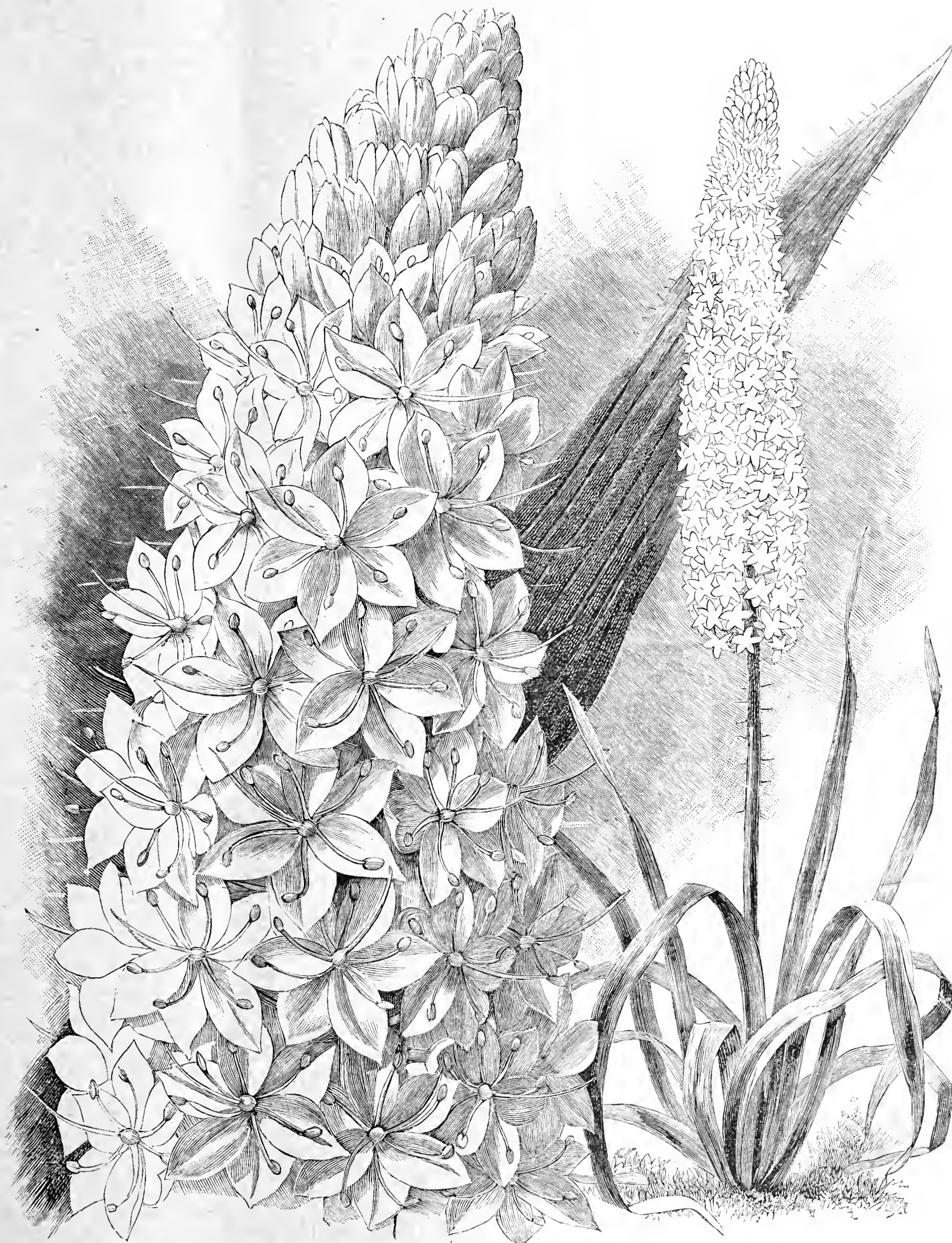


Fig. 137.—EREMURUS HIMALAICUS.

The Royal Horticultural Society.

Scientific Committee, June 5th.

Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Tulipa Gesneriana diseased.—Some roots received from Mr. Mann, Penhill Close, Cardiff, were forwarded to Dr. Smith for examination and report.

Iris with diseased roots.—Mr. Wilks brought some plants showing premature decay in the foliage. He observed that he had received reports from all parts of England of a similar condition among *Irises* of all sorts. The roots appeared to rot close to the rhizome. They were also sent to Dr. Smith.

Odontoglossum synanthic.—A flower from a spray on a plant of *O. triumphans* (?), sent by Mr. Pitt, illustrated the twin condition of two coherent flowers; the columns, however, were free from each other above the combined ovaries, as well as the two labellums.

Fendlera rupicola.—Mr. Gumbleton exhibited a flowering branch of this unique tree, there being but one species to the genus. It is a native of Texas and New Mexico, and a near ally of *Philadelphus* or *Syringa*, as popularly known; but while the ovary is inferior in the latter genus, it is superior in *Fendlera*.

The Climate of Johannesburg.

THE whole of the Free State, and the southern half of the Transvaal, consist of wide, treeless, rolling grass plains. Across them ox-waggons travel like ships on the open sea; the railway stretches like a brown thread; and even an army in close formation, seen from a kopje at the distance of a few miles, looks little more than a snake winding its way through the veld. Bloemfontein and Kimberley stand at an altitude of about 4000 feet in the midst of the great plateau. North of these towns the country almost imperceptibly rises until the Witwatersrand is reached. To the north of this the Crocodile runs swiftly down through valleys rich with a tropical luxuriance of growth and deadly in the summer months with malarial fever. Through the Witwatersrand from east to west for twenty-five miles the main gold reef lies, and in the centre of the Rand stands Johannesburg, at an altitude of 5600 feet above the sea, and more than 1000 feet above the summit of Table Mountain. The climate which this position gives is ideal. It is the hill climate of the tropics, than which the world contains nothing more delightful. The buoyancy of a mountain atmosphere with but little of its rigour has an exhilarating effect, stimulating alike to health and energy, which no other part of South Africa enjoys to the same extent. The languor of the coast is almost unknown. The atmosphere is as transparent as the ultimate ether, and the brilliant sunlight of the day is only rivalled by the splendour of the night. When the moon is up, says a writer in the "Saturday Review," no other light is required and the Boer with his waggon travels more by night than by day. The starlight serves when the moon fails.

The rainfall is abundant, but comes down for the most part in heavy storms in the summer. It is usual during January and February, two of the hottest summer months, to have one or two series of some three days' heavy and continuous rain. But the rain once down the sun again reigns supreme. Preceding the thunder storms in summer, and sometimes for days together in the winter, dust, the one drawback to perennial magnificence of climate, becomes a trying feature in the health and happiness of life. Johannesburg has not the fog, slushy snows, and eternal rain of other lands. But it has its dust storm. Sometimes for minutes together the opposite side of the street is blotted from sight by a blinding wall of moving red sand. The unfortunate wayfarer with difficulty struggles along—now partially opening one eye, and now the other, he gropes his way; his mouth, eyes, ears, hair, clothes, filled with grinding particles of sand. When he gets home even his house affords but a partial shelter—the finer particles of a South Africa dust storm drift in every room and every cupboard. Dust is swallowed with the soup at dinner; it lies on the pillow at night; in the morning it floats a thin film on the water of the bath. But this is an occasional not a constant nuisance, and it is largely to be controlled by mending the roads. In fact dust is only to a very small extent to be regarded as a climatic defect. The winds, the tormenting half-gales of the High Veld, which are so common through the winter, in whatever other way they may try mankind only produce dust in any great quantity where roads or debris heaps occur. The veld itself, although only loosely knit together by a

tufted vegetation of rank grass is sufficiently compact to resist almost entirely the winds that sweep it. At times it is true even the veld has dust storms—what dry country has not in the presence of a gale?—but they are trifling compared to the dust storm of Johannesburg.

From nature then man has little to complain of. The climate of the high veld in the Transvaal on which Johannesburg is situated is almost perfect. It is man himself that is vile. Mortality in Johannesburg is high for two reasons. The one is abominable sanitation, the other an indifferent water supply. Typhoid is the Nemesis of these defects. Both are capable of remedy. Epidemics of typhoid occur periodically in the summer and autumn in Johannesburg and along the mines. These are preventable, but hitherto the inhabitants of Johannesburg have been denied all control of their own municipal affairs. Rich revenues contributed for municipal purposes by the Uitlanders have been principally used in other directions, and what little has gone to the town has been administered by a board, on which the controlling power was of the ignorant Boer order, assisted by incompetent Boer officials. The result has been a heavy annual death roll from preventable disease, in numbers almost as great as those produced by the war. Of the country around Johannesburg it may fairly be said that it enjoys Johannesburg's advantages of climate without its disadvantages of sanitation. The land is in many places not only capable of cultivation, but fertile and productive. Trees grow readily, and many plantations have sprung up both in the various suburban townships and in the surrounding country. To the north of Johannesburg the land falls away rapidly, but among the slopes and valleys of this district there are many fertile spots which would well repay cultivation.

Pretoria, which is in this more broken country, is 2000 feet lower than Johannesburg, and has a warmer and less bracing climate. North-west of the Rand is the quaint little town of Rustenburg. Here an almost tropical luxuriance of vegetation is found, and Bananas and Orange groves line the streets. The climate is warm and more tropical in character, but is nevertheless healthy. Malaria, which is scarcely known at Johannesburg, begins to be found in the low country north of Rustenburg and Pretoria, and in the valley of the Crocodile occurs at time severely. Yet in the winter this low district, the Bush Veld as the Boers call it, forms a delightful hunting ground. There the Boer with his waggon, his family, and his herds, often sojourns through the winter months, moving from time to time to find fresh pastures for his herds or seek fresh game for his rifle. There is one feature in the climate common both to Low Veld and High Veld which is distinctive and unique, unique alike in its grandeur of effect and in its danger. It is the South African thunderstorm. This is perhaps most terrible when it courses along the summit of a range of hills such as the Witwatersrand. During such a storm there are moments when the air is a blaze of fire. The rain falls in such a deluge that the surface of the ground is like a lake. Between the flash and the report there is scarcely an interval, and the peal of the thunder is almost one incessant roar.

A Text-Book of Botany.*

IN issuing this work, extending to some 600 pages, Messrs. Macmillan have had in view the needs of the advanced student. It cannot in any respect be considered as an elementary treatise, and a man must have made himself a good practical field botanist during the summer months in order to appreciate sitting down with his microscope for the other half of the year to a careful examination of specimens under the guidance of this volume. It deals with questions of structural and physiological botany in the first half, and does this in so thoroughly exhaustive a manner as to lead the casual reader to suspect immediately that so much of solidity can alone proceed from the Teutonic brain. This is correct, since no less than four professors in the University of Bonn have co-operated in its production. The second half of the book deals with the special botany of the Cryptogams and Phanerogams, and here again we find much more concentrated food for reflection admirably illustrated by diagrams. The last quarter consisting of a descriptive classification of the monocotyledonous and dicotyledonous plants is a résumé of the characteristics of all the leading orders as known in the larger works of Hooker and Lindley, also illustrated with beautiful diagrams, many of them in colour. As a handy digest of more comprehensive works it is in every respect to be recommended, and seeing that of its 600 pages only six lack an illustration of some sort, the earnest botanist will in perusing it find many subjects of pleasure as well as instruction.

* A Text-Book of Botany (Strasburger), translated from the German. Macmillan & Co. 18s.



The Pear Maggots.—These are a terrible scourge this season, worse than ever. They are just leaving the Pears now they have done the mischief. Is there any practical means of checking them on grass orchards?—J. HAM.

Soap Trees.—There are several trees and plants in the world whose berries, juice, or bark are as good to wash with as real soap. In the West Indian Islands and in South America, says a contemporary, grows a tree whose fruit makes an excellent lather, and is used for washing clothes. The bark of a tree which grows in Peru, and of another which grows in the Malay Islands, yields a fine soap. The common Soapwort, which is indigenous to England, is so full of saponine, that simply rubbing the leaves together in water produces a soapy lather.

A Pea and Bean Pest.—At the last council meeting of the Royal Agricultural Society of England the consulting entomologist reported that numerous complaints had recently reached him of injuries by the Pea and Bean weevil—an insect which notches the leaves and stems in a curious and characteristic manner. It is rather remarkable that the grub of this insect has only been noticed as the cause of injury to the Pea and Bean roots during the past two or three years, though the weevil itself has been a familiar pest for many years. It is stated that the best method of dealing with the weevil is to give a liberal application of soot when the crop is wet with a heavy dew.

Infection in Fruit.—Tasmania has taken alarm over the dangers of infection that lurk in colonial fruits that have passed through ports where the bubonic plague has made its appearance. Amongst others, the "Hobart Mercury" contends that there is often great carelessness in the way in which this kind of food stuff is stored and matured; and although people have themselves begun to be careful in their consumption of these articles (which is the best kind of caution), they call on the Government to appoint special inspectors. Indeed, all customs' offices at home and abroad ought to use special care in admitting consignments of produce from any infected source, as, after all, ships' rats are the most lively source of plague contagion.

Edible Peas.—How well these look this season! Although in many places they suffered from that too well remembered sharp April frost, which left its mark upon them, they seem to have grown out of it, and I do not think I have ever seen them looking better than now. At Feltham Messrs. Veitch & Sons have 18 acres of Peas, all looking wonderfully well. Great quantities of these, especially the stock trials, are staked, but such a season as is the present can only give a first-rate trial, and a look over these Peas in the open field at Feltham will presently prove to be very interesting. I noted several new ones and in bulk those with which the name of the firm has been thoroughly identified. There will also be a huge trial of Dwarf French Beans amongst many other plants.—WANDERER.

A City Rectory Garden.—It can scarcely be said that gardens are very numerous in the heart of the City of London, or that the conditions are particularly favourable to the production of plants and flowers of the finest quality. Strenuous efforts are, however, made to grow plants by the few, and amongst them must be included the Rev. Clementi Smith, of St. Andrew's-by-the-Wardrobe. Here in the small rectory garden, completely girdled by high buildings, Mr. and Mrs. Smith enter enthusiastically into horticulture. They have a few square yards of garden with a large greenhouse, and it is really a matter for surprise that such a diverse collection of plants can be grown in such a limited space. I had the pleasure of seeing it a few days ago, and am looking forward to a second visit, as it will be more than interesting to know what plants will succeed and what will fail. Of one thing everyone may be convinced, which is, that if personal care and coaxing can persuade a plant to grow it will receive both from Mr. and Mrs. Smith. The former is, as, perhaps, readers of the *Journal of Horticulture* are aware, somewhat of a pomologist, and has Apples in his fruit case that would not shame many a professional gardener with much superior fittings.—F. W. H.

Philadelphus Boule d'Argent.—Now that this most excellent variety is becoming more and more plentiful, I suppose we shall have the old varieties going out of cultivation. There can be no doubt that P. Boule d'Argent is particularly useful at this season of the year for the embellishment of the conservatory, especially when the plants are kept dwarf and are as profusely flowered as a number I saw at the Temple Show. I have only three plants, but I find it so valuable and so much admired that I must take the first seasonable opportunity of considerably increasing my stock. Few plants have been more appreciated by my employers, who, as a rule, are not keen on novelties, but would rather remain loyal to the old favourites that have been grown in their gardens and glass houses for about a quarter of a century.—R. J. P.

Ayrshire Potato Crop.—The protracted cold weather has apparently been responsible for considerable damage to the prospects of the early Potato crops on the Ayrshire seaboard. The sharp frosts about the middle of May nipped the shaws considerably, blight being reported in the Girvan Valley, where the earliest and best crops are usually grown. It is not expected, says a daily paper, that the injury will be permanent in so far as its effects on the yield are concerned, but as the primary object in these early districts is to be on the market before the general supplies arrive, the delay is serious from a financial point of view. Several of the most advanced and healthiest crops have already been sold at what are vaguely declared to be very high prices. Those who are fortunate enough to have good early crops will naturally reap a rich monetary harvest, but for the ordinary grower the season does not promise well.

Hybrid Streptocarpus.—I had the pleasure of seeing the huge collection of these singularly interesting and beautiful greenhouse plants Messrs. Jas. Veitch & Sons have at their new Feltham Nursery, and can well sustain what "F. W. H." has written about them. Remembering what Streptocarpaceae were not very many years ago, it is hardly possible to do other than marvel at the great advance made in them through intercrossing and selection. The colours and markings are becoming more varied each year, and whilst the plants are far more floriferous and robust the flowers also are showing finer form. It is impossible for anyone having florist's ideas in them not to find admiration for all those which not only have clear decisive markings or hues, but also have bold mouths and rounded edges to the lobes. In colouration many are so charming that they bid fair soon to rival the Gloxinia, if not in size at least in beauty.—OBSERVER.

Seedling Verbenas.—Whilst Mr. Gardiner may have good reason to lament the decadence of the Verbena in named form, as bedding or other decorative plants, yet there is much reason to be gratified over the evident resurrection of the flower in bedding arrangements in the seedling condition. So marked has been the advance made in seed stocks, that one often sees in beds of mixed seedlings flowers of such excellence that in the days of the old varieties to which Mr. Gardiner refers, and which I well remember, the best of the seedlings of to-day would have been regarded as grand additions. Seed of Verbena is relatively cheap, and easily raised if sown in shallow pans stood in a little warmth, furnishing strong plants to bed out at the end of May. Later in the summer a good mixed bed becomes a beautiful object. It is also so easy then to propagate by cuttings any that have specially fine qualities. We have in these seedlings a much greater range of colours than the old named varieties gave us.—A. D. K.

Weed Destruction.—An interesting experiment is at present being conducted at the trial grounds of the Royal Agricultural Society of England at Woburn. This experiment has been instituted with the object of testing to what extent the nature of the soil influences the presence of certain kinds of weeds, and also of discovering the most effective as well as the most economical methods of eradicating certain of the most troublesome of our common farm pests. The wild Marigold, wild Onion, wild Oats, and wild Poppy are receiving special attention in this respect, as also are Spurry and Sorrel. The soils in which these weeds naturally grow profusely are being submitted, says the "Farmer's Gazette," to chemical examination in order to ascertain if they contain any constituents likely to determine or influence the presence of these particular weeds. The application of lime is being tried for a destruction of wild Marigold, and an effort is being made to exterminate wild Onions by the use of carbolic acid. The outcome of these experiments will be eagerly looked for by agriculturists in all parts of the kingdom.

Mulching.

THE process of applying various substances as a covering for soil above the roots of trees and plants, to prevent evaporation, and so preserve uniform heat and moisture, is a natural one. In Nature the gradual change that overtakes everything has one primary object—*i.e.*, to make dust of all things. All over the surface of the land evidence exists of a natural mulching process—the ceaseless decay or reduction of parts called “weathering.” The effect of this, combined with the growth and decay of vegetation, is to promote the formation of soil and subsoil. Taking the surface of the earth, there exists a crust of vegetation. First we encounter a dark band of fine particles of earth crowded with rootlets and forming the true soil—the layer of most complete decay. Then on digging further we reach a broken-up layer, through which strong roots of the vegetation descend, and this is termed the subsoil. Excavating still lower rock is reached, which, shattered and torn or worn at the top, shows the earlier stages of disintegration. Worms, insects, and larger animals that die upon the surface add their mouldering remains to the uppermost deposit, and together with the decaying vegetation supply mineral as well as organic matter, on which the fertility of the soil so much depends. These also furnish the organic acids, which, absorbed by percolating rain water, help to decompose rocks.

The carpet of verdure, the fine mould, and the rougher material underneath, called respectively turf, soil, and subsoil, reduce weathering or decay, yet not wholly, for if the process ceased plants growing on the surface would dwindle and die. Impoverishment of the soil undoubtedly takes place by successive generations of the same plant, but the natural vegetation is for the most part mixed, and the process of weathering not entirely arrested, as successive generations of plants are able to draw nutriment from the soil. In Nature forests may decay and be replaced by shrub and grass, while vast tracts are practically barren through accumulations of peat precluding disintegration of the underlying strata. The causes, however, are mechanical, for draining transforms the moor as well as the morass from sterility to fertility. The downs bear their verdure undiminished because the weathering process continues, for though the grassy turf protects the surface, the underlying rock gradually decays supplying new food indefinitely.

Other agents besides quiet atmospheric disintegration and the accumulation of vegetable and animal *débris* mulch the surface of the earth with fine mould. The countless ground insects, and the still finer particles of mould swallowed and conveyed to the surface by the common earthworm, sometimes, according to Darwin, as much as 10 tons per annum over an acre of ground in some places, represent natural mulching, while the holes mean atmospheric air and rain water let into the soil for the oxidising and dissolving the rocks. All forms of mulching are conservative of the soil's moisture and protective of the soil's warmth. Wet land is proverbially cold, whether in a dark coat (peat) or a grey (chalk). Sand possesses a minimum of water-absorbing and retaining power, that of clay being five times, and humus or peat six times greater. It follows that fine sand will hold more water than coarse, and the finer the soil, therefore, the smaller the spaces between the particles the more water will be held, the drainage being efficient. It is also noteworthy, that if gravel allows water to percolate more freely through it than coarse sand, the underground water or soil moisture will rise considerably less in the gravel than in the coarse sand when the surface becomes dry. In passing to finely divided soils clay has the highest suction for soil moisture, but it bakes in droughty weather, cracks, and lets out the soil moisture into the air. Chalky land yields, perhaps, more underground water to the surface soil than any other, but the retention is not so great as that of the finer divided vegetable mould.

Now one of the chief objects of good cultivation is to cut off the supply of underground moisture so as to prevent its evaporation into the atmosphere. Nature assists this by surfacing the earth with fine mould, and by the *débris* of vegetation. The cultivator digs and trenches the ground, well knowing that the finer and deeper the soil the better will be the crops. Further, the surface is kept loose by hoeing, and thus lets in the air and rain, and also conserves the warmth and moisture of the soil, the fine tilth causing the rising moisture to spread through the soil beneath the surface instead of escaping into the air without passing through the plants. Thus the soil moisture and food elements are got into the crops and profit accordingly accrues.

A rough, cracked surface, on the other hand, allows the underground water to escape freely into the open air, and the crops are distressed for lack of moisture. In certain soil it is almost impossible to keep a loose surface, and it is not always feasible to procure material to prevent its running together with rain, and in dry periods being preserved in almost every direction. Still this is the best conservative of the soil moisture, and no pains should be spared on a stiff soil to secure and maintain a fine surface. The fact of the underlying stratum cracking is not then so material, as the surface soil will cut off the underground water, so that it will be at the service of the crop.

We thus arrive at two points in relation to the conservation of soil moisture. One, the fine soil resulting from atmospheric disintegration of rocks, which, as in cultivation, is in the condition best calculated to absorb the sun's heat, and allow the rain and atmospheric air to enter the ground. This corresponds to the good tilth of cultivation. It is, however, the nature of soils to become compact, which favours capillary attraction, so that a distinction must be made between natural and cultivated soils. In the former the surface working is effected by the action of burrowing animals, while in the latter the process of hoeing or other surface cultivation operates towards the same end. The other point is that of the dead natural vegetation acting as a mulch. The parts forming the *débris* are the remains of recent vegetation disposed all ways, but mostly parallel to the earth's surface, and they protect the soil from cold in winter and from heat in summer. Of course the recent vegetation passes by degrees into the state of complete decay, and in its various stages represents the organic matter of the soil called humus. It is known by its dark colour, and this means heat-absorbing power; while in the opposite direction it implies cold, for it absorbs water and keeps the soil damp. Of its other properties nothing need now be said, suffice that the points appertaining to mulching be clearly defined, namely, the use of littery material in winter as a protection against cold, and its employment in summer as a preservative from heat or drought.—G. ABBEY. (To be concluded.)

Carnations in Pots.

THE excellence of Carnations, either when grown as specimens for adorning the greenhouse or conservatory or for the production of blooms for cutting, is beyond question. They are never unsightly except when mismanaged. As cut flowers they are invaluable, and for massiveness of form and grateful perfume are unsurpassed. I have Carnations in flower more or less all the year round with very little trouble, and for the benefit of your readers whom it may interest I give an outline of the system which has been very successfully adopted for many years.

In September the desired number of cuttings are taken, choosing those that are vigorous; then the requisite number of 5-inch pots are prepared to receive them by being well drained. On the potsherds a layer of decomposed manure is placed, and then the pots are filled three parts full with a compost of loam and leaf soil and a dash of sand, the remaining space being filled with pure sand. The cuttings are inserted rather thickly, and having dipped the pots in a pail of water to insure saturation they are placed near the glass in the front of a cold pit, where they remain all the winter, and receive no more attention except a judicious watering occasionally. The following March the cuttings, being well rooted, are potted singly in 3-inch pots, and replaced in their old quarters; here they are kept moderately close for about a week, and receive no water except a sprinkling with the syringe two or three times a day. This renders shading unnecessary, and is, I think, preferable.

When rooting freely in the fresh soil the plants are watered thoroughly as they require it, and the leading shoots are pinched off in order that three or four side growths may start near the base of each of the plants. In about two months' time they will be ready to shift into 6 or 7-inch pots according to their size. At this and all successive pottings it is well to use the soil in a rough lumpy state. The loam we employ is rather light and poor when we get it, but is brought into splendid condition by being stacked one year prior to being used. Layers of turf and stable manure are built in alternately, with a sprinkling of bonemeal, and the whole is thoroughly soaked with liquid manure as the operation proceeds. After the 8-inch shift the plants are grown in a frame, with slates below the pots to prevent the ingress of worms, and watered freely, the growth being equalised by pinching. The sashes are taken off altogether on fine nights, so that the plants may be refreshed with dew.

In September, or as soon as the roots have thorough possession of the soil, the plants are shifted into 10 or 12-inch pots, and in these they commence to flower the following spring. When the plants become rootbound we supply them with weak liquid manure made of sheep droppings, a little guano, and soot. Under this treatment they continue to flower for months, producing that fine dark foliage which is so characteristic of healthful vigour. Those required for later flowering are pinched back, while if very large specimens are wanted they are potted in 18 or 20-inch pots. For large pots mix a quantity of broken crocks with the soil to keep it sweet, for if it becomes sour the plants sicken and die. Before shifting them, too, they are well watered, and do not require any more until they have rooted in the fresh soil; but flagging is prevented by the frequent use of the syringe. That system is, I consider, essential to the successful repotting of large plants. Now that the plants are large enough, it is

an easy matter to have a continuation of bloom. With good management they may be kept alive for many years, and by judicious pinching in spring and keeping a few plants in a growing temperature—45° to 50° all the winter—flowers may be had at any time.—M. C.

Perennial Asters.

To do justice to the perennial Asters and their usefulness as border flowers would require far more space than is available, yet no survey, however condensed, of hardy border flowers could be considered anything like complete which did not, at least, give a résumé of the genus and a



FIG. 138.—ASTER NOVÆ-ANGLIÆ PULCHELLUS.

brief mention of some of the most valuable species and varieties. As a dwarf plant for the front of the border we have the charming *A. alpinus* with its blue flowers, only raised above the soil from 6 to 10 inches. It is surpassed by the varieties *superbus* and *speciosus*, and those who wish a white flower of similar character will find it in the white variety. *A. alpinus* is easily grown, but it has the fault of being a favourite of the slugs, which are very destructive of it in autumn. *A. Amellus* is a fine plant of comparatively dwarf habit and with very large flowers. They are of a fine blue, but they are rather inferior to the varieties *bessarabicus* and *Riverslea*.

Aster cordifolius and its varieties are very pleasing on account of their graceful habit and the multitude of flowers they produce. *Cordifolius elegans*, *major*, and *Photograph* may all be named with confidence. *Acris*, with its variety *dracunculoides*, are of good bushy

habit, and give plenty of lilac-purple flowers. A charming flower is *Coombe Fishacre*, which has fine flesh coloured flowers, and is most pleasing when in full bloom. *Amethystinus* is a rather nice flower, though some of the newer varieties are superior. A favourite of the writer is *diffusus horizontalis*, which is a late bloomer, and gives a profusion of its red and white flowers, which are exceedingly small. The variety *pendulus*, which has white flowers, is also a desirable one. Then *ericoides* is, of course, indispensable with its elegant sprays of white flowers. Its variety *Clio* is lovely also; it has beautiful blush blooms. A neat dwarf plant is *dumosus*, which grows about 18 inches high, and has mauve flowers. *A. lævis* has fine long sprays of deep blue flowers, and its rather numerous varieties are well worthy of attention. *Ariadne* and *Calliope* may be mentioned as good varieties of this species.

A. grandiflorus is unfortunately too late in flowering for most gardens. This is to be regretted, as its flowers are so fine in size and in the violet-blue colour they give. *Lindleyanus* and its variety *nanus* are also good, the latter being a good plant for rock gardens. *A. lino-syris*, the old "Goldilocks," is the only yellow Starwort I know of. In addition to its colour, its Flax-like foliage is an attraction to many. In *Aster novae-angliae* and its varieties we have a most valuable set of plants, giving us not only some shades of purple, but also some of rose and crimson—both of much value in the season at which they bloom. *Roseus*, *ruber*, *Wm. Bowman*, *Woolston*, and *pulchellus* (fig. 138) would make a good selection.

In the varieties of *A. novi-belgii* we are embarrassed by the wealth of numbers. It is by no means easy to select from among them without omitting some of great beauty. They are constantly being added to, and some new varieties appear in trade lists every year. The old *Robert Parker*, about 5½ feet high, has not yet been superseded, although I believe that an improved variety will soon be in commerce. There is more than an ample choice among the remainder, which range in height from 18 inches to nearly 6 feet in ordinary soils. Of whites we have *Madonna*, *John Wood*, *Harpur Crewe* and others. I should take these three in the order named. Of various shades of mauve-pink, lilac, rose, and blue, one may name *Edith*, *Ella*, *F. W. Burbidge*, *Irene*, *Maia*, *E. G. Lowe*, *Margaret*, and *Top Sawyer*, with the earlier *lævigatus* and its variety *Madame Soymier*, the former of these two being a well known favourite for bedding when associated with early *Chrysanthemums*.

The few varieties of *paniculatus* give a boon for cutting in the shape of the fine sprays yielded by *W. J. Grant*, whose blush-white flowers are generally admired. *Puniceus pulcherrimus* is one of my favourites, with its red stems and blush flowers. *Versicolor* gives us blossoms which change from white to rose, the different colours on the plant at the same time attracting the attention of many persons.

Aster vimineus gives us lovely sprays of flowers; the type, *Cassiope* and *nanus* being all good. Their flowers are white. *Tradescanti* is also the delight of those who like elegant sprays of small white flowers and neat foliage. This brief commentary upon the Starworts or Michaelmas Daisies cannot be concluded without a reference to a Himalayan species named *Thomsoni*, which comes early into bloom and is very distinct from others. There are many others, of course, but the number is so great that all cannot be referred to now.

It seems almost needless to say anything about the cultivation of a plant so easily grown and which needs so little care. Yet it has some wants, and attention to these will result in a better display and in greater satisfaction being afforded to the grower. As a general rule the most of them are adapted to border cultivation. Some are, however, of rather aggressive habit, and, if allowed to do so, will soon take possession of the space which should fall to another plant as well as its own. Seedlings, too, ought not to be allowed to grow up along with the old plants, or they will injure the latter. They may be transplanted and put in some spare place, where they may be selected from when in bloom. There is still a vast possibility of improvement in the Starwort, and the seedling raiser will have at least the chance of finding a variety of much excellence. Where time and space can be spared a sowing of seeds from some of the best forms may well be made annually.

Some of the stronger growing Asters are of great worth in the wild garden, and many of the others make capital bedding plants, either alone or in association with other flowers. Generally speaking, all should have the best of soil, though I have seen in some gardens several of the taller Starworts so strongly grown that they were unwieldy and less beautiful than if restricted in their height. It may be mentioned that the taller Asters may be cut down when they have made some growth. This will render them rather dwarfer.

—S. ARNOTT.

Buddleia Colvilei.

WRITING of this plant Sir Joseph Hooker says:—"It is certainly the handsomest of all Himalayan shrubs, and it is impossible to exaggerate its beauty as seen in the borders of a Sikkim forest, covered with pendulous masses of rose-purple or crimson flowers relieved by the dark green leaves." In European gardens there has been little chance to see it at its best, as it proved a shy bloomer, but in the two or three places where it has flowered it has quite upheld its high reputation, for, in addition to being the most beautiful Buddleia in cultivation, its elegance and beauty give it a high place among flowering plants. In 1892 it first flowered in the British Isles in the garden of Mr. Gumbleton, Co. Cork. Several times since it has flowered in the same place, its flowering also being recorded from Shropshire and Southampton in recent years, while at Kew it is now flowering for the first time.

In habit it makes a large bush with long arching branches bearing large quantities of deep green leaves 6 or 8 in. long by 2½ wide. The flowers (fig. 139) are borne in drooping panicles 9 in. or a foot or more long from the extremities of the shoots. Individually they remind one of a small Pentstemon flower about 1 inch across the mouth. They vary greatly in colour on different plants, those of the Kew plant being a very deep red. Except in favoured localities it is not perfectly hardy, and even in those places it is better against a wall. Mr. Gumbleton grows his plant outside, and it is also growing out of doors in Shropshire, but at Kew it is planted in the Himalayan house, where it appears to be quite at home. It grows well in light loam, requires plenty of thinning, and full sun.—W. D.

Notes from Gunnersbury.

A Prolific Nectarine Tree.

FILLING the roof of one moderate sized house at Gunnersbury House gardens is a single tree of Lord Napier Nectarine. It has been planted some twenty-five years, and may be regarded as having carried full crops for at least twenty years. In all cases the fruits being pushed up on to the upper side of the tree, there seems from below to be a poor crop, but looked at from above the crop is seen to be a wonderful one, every fruit being visible. This year the tree carried 500 fruits, certainly a heavy crop, yet very fine and superbly coloured. Last year the crop was lighter, being only 300; still if for twenty years the average crops were 400, the tree would have in that time produced 8000 fruits, and have thus proved to be exceedingly profitable. Taken at the low price of 6d. each, the total value would have been £200, but it would, because the fruits were early and so very fine, have represented a much larger sum. There is no reason why the tree should not under Mr. J. Hudson's skilled attention continue to fruit for many years.

[This splendid tree was illustrated in the *Journal of Horticulture*, July 27th, 1899, page 81.]

Pot Gooseberries.

In a very large span house at Gunnersbury Park Mr. Reynolds has, with many of other fruits and flowers in pots, some fine circular shaped Gooseberry bushes in large pots. These are about 3 feet in height, and each one comprises some half dozen erect stems, forming cordons, kept hard spurred, and are carrying large crops of fruits. The products seem to be quite as satisfactory as is found in any form of fruit culture in pots. One or more of these plants are well worth illustrating. The varieties are of the best dessert, and the fruits produced come not only fine, but are clean and well matured. It is not difficult to keep such bushes clean, and though they need constant attention in the matter of watering, yet it is not greater than other pot trees require. Of course swelling fruits are now assisted with waterings of liquid manure.

A Tree Killed by an Iron Seat.

On the lawn at Gunnersbury House, Mr. Leopold Rothschild's residence, is the stem of an Ash tree now quite dead, but which presents the strange spectacle of having been killed by an iron trellis or rod seat, which many years ago was fixed round the stem at a short distance from the ground. In placing it no allowance seems to have been made for the tree trunk to swell, with the result that in time the bark overgrew and enclosed the inner circle of iron rod. This eventually checked the downward sap flow to such an extent that the alburnum grew over the ironwork of the seat so much that ere killing the tree the bark nearly covered the seat, and in two or three places did so absolutely, even running over and forming points as though molten metal had so far overrun the seat, then been suddenly hardened. It is so far an interesting object as showing how careful those persons should be who fix seats round tree stems.—A. D.

Horticultural Shows.

Tamworth Pansy and Viola Show.

June 4th.

THIS exhibition was held in the grounds of Tamworth's historic Castle, the gate money to be given in aid of the "Castle Purchase Fund." Entering the show tent the visitor's attention was arrested by a brave array of Pansies and Violas. Mr. W. Sydenham and family were responsible for the decorative floral designs, chiefly à la Viola in composition, and some estimate may be formed of the display in question when it is stated that about 100 feet of staging was laid under contribution, and incontestably proved the adaptability of the soft-toned colouration of the Viola and its shape for such decorative effects. In the competitive classes Miss Sydenham and Miss M. Sydenham were respectively awarded the first and second prizes for floral designs in Violas, whilst Miss Stuchfield was also deservedly awarded a first prize for a floral harp of Sweet Peas and W. Allen Richardson Roses.

In the open to all class for forty-eight Fancy Pansies the competition was confined to Mr. John Smellie, Busby, Glasgow, the first prize-winner; and Mr. T. Naden, Derby, the well-known cottage exhibitor, both having fine blooms of the leading varieties. The same exhibitors secured the prizes in the classes for twelve Fancy Pansies and twelve seedling Fancy Pansies, whilst Mr. Naden was accorded the premier award for twenty-four Fancies, dissimilar; and Mr. W. B. Fowler the second prize, both having fine representative collections. The class for twenty-four sprays of Violas was interesting, the first prize being awarded to Mr. John Smellie for a meritorious exhibit. The second prize was given to Mr. Councillor Waters for a good exhibit. For twelve sprays of rayless Violas the order of merit was reversed.

Prizes were offered for amateurs residing south of the Humber. The first prize for twenty-four Fancy Pansies was secured by Mr. T. Naden for very fine blooms of some of the leading varieties; Mr. W. B. Fowler followed. For twelve the same competitors secured the awards. For six Messrs. T. Naden, Paul, and Fowler were the respective winners. For six Fancy Pansies, one variety, Mr. Naden took the first prize with a new seedling named Mrs. T. W. Sanders; and Mr. Baldwin second with David Rennie. For six seedling Pansies, in three or more varieties, Messrs. T. Naden and Fowler occupied the positions as named. For twelve sprays of Violas, distinct, Mr. Councillor Waters was the only exhibitor, and was accorded the first prize. For six the same exhibitor gained the first, and Miss Hanmer the second prizes. Classes open to amateurs residing within twelve miles of Tamworth Town Hall.—For twelve Fancy Pansies, dissimilar, Mr. J. W. Paul and Mr. Fowler were the respective winners. For six the order was repeated; and for three blooms, one variety, Mr. Fowler was the only exhibitor.

In the miscellaneous exhibits Mrs. W. Sydenham was awarded a special prize for a basket of mixed Roses. A gold medal was deservedly awarded to the same exhibitor for the grand display already mentioned, and in which, it should have been remarked, a nice collection of hardy flowers was included. He also exhibited a special board of Violas containing several new varieties, amongst which the best were The Sultan, an extraordinary variety of a shaded dark brown colour, and resembling a butterfly both in shape and colour; Sydenham's Scarlet Viola, apparently a cross between a Fancy Pansy and a Viola, and may prove the forerunner of a new class; and Mrs. W. Sydenham, a rayless rich yellow coloured Viola of first-rate substance and form, also habit and constitution, which is considered by Mr. Sydenham as the best he ever raised.

Royal National Tulip Society.

Northern Exhibition.—June 2nd.

THE annual exhibition was held in the Free Library, Middleton, near Manchester, on Saturday, June 2nd. Considering the miserable nature of the weather experienced during the last month, the quality of the flowers, especially those exhibited by Messrs. Noedham and Bentley, left little to be desired; but from one cause or another few exhibitors put in an appearance, and a sad feeling prevailed as one remembered the great fights for the cup in the days of Dr. Hardy, Dr. Horner, Samuel Barlow, R. Headly, David Barber, Wm. Kitohen, Wm. Whittaker, Daniel Woolley, Wm. Parkinson, John Hepworth Wm. Lea, and others—now gone to their long home. And if exhibitors were few, visitors were scarce also, although crowds of people passed the door on pleasure bent. In these rapid days the quiet beauties and refinements of the Tulip appeal to only a few people in the North of England, and unless a great change occurs the Northern Exhibition will be numbered with the things of the past. The bright spot of the day's proceedings was the visit of the veteran grower and raiser, Mr. James Thurstan, of Cannock, who brought with him a collection of his own seedlings, which were much admired. Some of the bybloemens would undoubtedly displace Talisman and Adonis were they in general

cultivation. Tryphena and Mrs. Thurstan are gems in the rose section, and the bizzarres, which had evidently Paxton and Hardy blood in them, would be of value. Beyond Mr. Thurstan's seedlings novelties were scarce—in fact, the surprises of the show were the feathered Magnum Bonum, Vicar of Radford, and Talisman, exhibited by Mr. Needham, which have not been seen in such good style for thirty years at least. There was an excellent competition between Messrs. Needham and Bentley for the cup, which was this year given by Miss Willmott, of Great Warley; but the super-excellence of the former's feathered flowers decided the matter in his favour. Following is a complete list of the awards made by the judges, Messrs. Simonite, Sheffield; Barratt and Housley, Stockport; and Whittaker, Royton.

Class 1. *Twelve rectified Tulips, two feathered and two flamed in each class.*—First, Mr. O. W. Needham, Hale, Cheshire, with Talisman and Chancellor, flamed; Trip to Stockport and Talisman, feathered

roses. Fifth, Mr. John H. Wood, Middleton, with Duchess of Sutherland and Talisman, flamed; Bessie and Violet Aimable, feathered byblœmens; Sir Joseph Paxton and Sulphur, flamed; Sir Joseph Paxton and William Wilson, feathered bizzarres; Aglaia and Modesty, flamed; Modesty and Annie McGregor, feathered roses.

Class 2. *Six rectified Tulips, one feathered and one flamed in each class.*—First, Mr. Needham with Talisman, feathered and flamed byblœmens; Sir Joseph Paxton, feathered and flamed bizzarres; Mabel, flamed, and Heroine, feathered roses. Second, Mr. Bentley, with Bessie, feathered, and Josephus, flamed byblœmens; Samuel Barlow, feathered and flamed bizzarres; Count de Vergennes, feathered, and Annie McGregor, flamed roses. Third, Mr. Mellor, with Bertha, feathered, and Talisman, flamed byblœmens; Lord Frederick Cavendish and Sir Joseph Paxton, flamed bizzarres; Mrs. Collier, feathered, and Mabel, flamed roses. Fourth, Mr. Moorhouse, with Bertha, feathered and



FIG. 139.—BUDDLEIA COLVILEI.

byblœmens; Sir Joseph Paxton and Dr. Hardy, flamed; Sir Joseph Paxton and Magnum Bonum, feathered bizzarres; Mabel and Annie McGregor, flamed; Mrs. Atkin and Vicar of Radford, feathered roses. Second, Mr. J. W. Bentley, Stakehill, near Manchester, with Thurstan's 213 and Beauty of Litchurch, flamed; Bessie and Queen of the May, feathered byblœmens; Sir Joseph Paxton and Samuel Barlow, flamed; Samuel Barlow and Masterpiece, feathered bizzarres; Aglaia and Mabel, flamed; Modesty and Comte de Vergennes, feathered. Third, Mr. Alfred Moorhouse, Wakefield, with Talisman and Queen of the May, flamed; Trip to Stockport and Bertha, feathered byblœmens; Sir Joseph Paxton and Samuel Barlow, flamed; Masterpiece and Sir Joseph Paxton, feathered bizzarres; Aglaia and Annie McGregor, flamed; Modesty and Mrs. Lea, feathered roses. Fourth, Mr. Wm. Mellor, Wakefield, with Adonis and Bessie, flamed; John Henry and Trip to Stockport, feathered byblœmens; Dr. Hardy and Sir Joseph Paxton, flamed; Sulphur and Lord F. Cavendish, feathered bizzarres; Annie McGregor and Mabel, flamed; Mabel and Sarah Headly, feathered

flamed byblœmens; Masterpiece, feathered, and Sir Joseph Paxton, flamed bizzarres; Modesty, feathered, and Annie McGregor, flamed roses. Fifth, Mr. Wood, with Alice Gray, feathered, and Duchess of Sutherland, flamed byblœmens; William Lea, feathered and flamed bizzarres; Modesty, feathered, and Aglaia, flamed roses.

Class 3. *Six rectified Tulips, one of each class, for small growers only.*—First, Mr. George Eyre, Ripley, Derby, with Adonis, feathered, and Talisman, flamed byblœmens; Albert, feathered, and Masterpiece, flamed bizzarres; Modesty, feathered, and Annie McGregor, flamed roses.

Class 4. *Three feathered Tulips, one in each class.*—First, Mr. Bentley with Adonis, Rifleman, and Mrs. Atkin. Second, Mr. Needham with Talisman, William Annibal, and Sarah Headly. Third, Mr. Moorhouse with Talisman, R. Yates, and Mrs. Lea. Fourth, Mr. Mellor with Violet Aimable, Lord F. Cavendish, and Mrs. Collier. Fifth, Mr. Eyre with Bessie, Masterpiece, and Comte de Vergennes. Sixth, Mr. Wood with Violet Aimable, Sir Joseph Paxton, and Modesty.

Class 5. *Three flamed Tulips, one in each class.*—First, Mr. Needham with Talisman, Sir Joseph Paxton, and Mabel. Second, Mr. Bentley with Talisman, Samuel Barlow, and Tryphena. Third, Mr. Moorhouse with Queen of the May, Sir Joseph Paxton, and Annie McGregor. Fourth, Mr. Eyre with King of the Universe, San José, and Aglaia. Fifth, Mr. Mellor with Mrs. Jackson, Sir Joseph Paxton, and Mrs. Collier. Sixth, Mr. Wood with Alice Grey, Masterpiece, and Aglaia.

Class 6. *Two Tulips, one feathered and one flamed, maiden growers only.*—No exhibit.

Class 7. *Two Tulips, one feathered and one flamed.*—First (Samuel Barlow Memorial prize), Mr. Bentley with Cyril, flamed, and Elizabeth Pegg, feathered. Second, Mr. Needham with Sir Joseph Paxton, flamed, and Trip to Stockport, feathered. Third, Mr. Moorhouse with Aglaia, flamed, and William Annibal, feathered. Fourth, Mr. Eyre with Mabel, flamed, and Trip to Stockport, feathered. Fifth, Mr. Mellor with Lord Denman, flamed, and Lord F. Cavendish, feathered. Sixth, Mr. Wood with Sir Joseph Paxton, flamed, and Modesty, feathered.

Class 8. *Single Blooms.*—

Feathered Bizarres.

- 1 Mr. Needham with Masterpiece
- 2 Mr. Needham with Attraction
- 3 Mr. Bentley with Sulphur
- 4 Mr. Moorhouse with Masterpiece
- 5 Mr. Needham with R. Yates
- 6 Mr. Needham with Lord F. Cavendish
- 7 Mr. Needham with Samuel Barlow
- 8 Mr. Needham with Sir Joseph Paxton
- 9 Mr. Bentley with Albert
- 10 Mr. Bentley with Duke of Devonshire

Feathered Roses.

- 1 Mr. Needham with Modesty
- 2 Mr. Needham with Modesty
- 3 Mr. Needham with Jane
- 4 Mr. Bentley with Mrs. Atkin
- 5 Mr. Bentley with Annie McGregor
- 6 Mr. Needham with Sarah Headly
- 7 Mr. Bentley with Mrs. Collier
- 8 Mr. Bentley with Heroine
- 9 Mr. Moorhouse with Rose Hill
- 10 Mr. Eyre with Miss Nightingale

Feathered Byblæmens.

- 1 Mr. Bentley with Elizabeth Pegg
- 2 Mr. Bentley with Talisman
- 3 Mr. Bentley with Adonis
- 4 Mr. Needham with Elizabeth Pegg
- 5 Mr. Bentley with Mrs. Jackson
- 6 Mr. Bentley with Fanny
- 7 Mr. Bentley with Beauty of Litchurch
- 8 Mr. Bentley with Nellie Hughes
- 9 Mr. Moorhouse with Violet Aimable
- 10 Mr. Moorhouse with Bessie

Class 9. *The best feathered Tulip.*—Mr. Needham with Magnum Bonum. *The best flamed Tulip.*—Mr. Needham with Mabel.

Class 10. *Six dissimilar breeder Tulips, two in each class.*—First, Mr. Bentley with Elizabeth Pegg and Beauty of Litchurch, byblæmens; Rose Hill and Annie McGregor, roses; Sir Joseph Paxton and Lloyd's 47, bizarres. Second, Mr. Needham with Rose Hill and Annie McGregor, roses; Bridemaid and Elizabeth Pegg, byblæmens; Goldfinder and Sir Joseph Paxton, bizarres. Third, Mr. Mellor with Adonis and Hepworth's Seedling, byblæmens; Annie McGregor and Mrs. Barlow, roses; Sir Joseph Paxton and William Wilson, bizarres. Fourth, Mr. Moorhouse with Bertha and Hardwick's Seedling, byblæmens; Rose Hill and Annie McGregor, roses; Sir Joseph Paxton and Excelsior, bizarres. Fifth, Mr. Wood with Elizabeth Pegg and Boardman's 1, byblæmens; Mabel and Rose Hill, roses; Sulphur and Sir Joseph Paxton, bizarres.

Class 11. *Three breeders, one of each class.*—First, Mr. Needham with Bridesmaid, Mabel, and Sir Joseph Paxton. Second, Mr. Bentley with Elizabeth Pegg, Hepworth's 9/64, and Lloyd's 47. Third, Mrs. Eyre with Bridesmaid, Mrs. Barlow, and Sulphur. Fourth, Mr. Moorhouse with Adonis, Mrs. Barlow, and William Wilson. Fifth, Mr. Mellor with Bridesmaid, Mabel, and William Wilson. Sixth, Mr. Wood with Ashmole's 126, Mabel, and Sulphur.

Class 10. *Single blooms.*

Bizarre Breeders.

- 1 Mr. Bentley with Goldfinder
- 2 Mr. Bentley with Lloyd's 47
- 3 Mr. Bentley with Dr. Hardy
- 4 Mr. Needham with Wm. Lea
- 5 Mr. Bentley with Sir Jos. Paxton
- 6 Mr. Bentley with Goldfinder
- 7 Mr. Needham with Lloyd's Seedling
- 8 Mr. Needham with R. Yates

Flamed Bizarres.

- 1 Mr. Needham with Samuel Barlow
- 2 Mr. Needham with Sir Joseph Paxton
- 3 Mr. Bentley with Masterpiece
- 4 Mr. Needham with Orion
- 5 Mr. Needham with Samuel Barlow
- 6 Mr. Bentley with Cyril
- 7 Mr. Eyre with San José
- 8 Mr. Bentley with Paul Pry
- 9 Mr. Needham with Joseph Lakin
- 10 Mr. Needham with Lord Stanley

Flamed Roses.

- 1 Mr. Needham with Aglaia
- 2 Mr. Needham with Mabel
- 3 Mr. Eyre with Annie McGregor
- 4 Mr. Needham with Aglaia
- 5 Mr. Bentley with Olivia
- 6 Mr. Eyre with Clio
- 7 Mr. Bentley with Collier's Seedling
- 8 Mr. Mellor with Mrs. Barlow
- 9 Mr. Wood with Triomphe Royale
- 10 Mr. Wood with Lady C. Gordon

Flamed Byblæmens.

- 1 Mr. Bentley with Talisman
- 2 Mr. Bentley with Talisman
- 3 Mr. Bentley with Trip to Stockport
- 4 Mr. Needham with George Edward
- 5 Mr. Bentley with Josephus
- 6 Mr. Bentley with Mrs. Ramsbottom
- 7 Mr. Bentley with Chancellor
- 8 Mr. Bentley with Hannah
- 9 Mr. Bentley with Queen of the May
- 10 Mr. Bentley with Adonis

Rose Breeders.

- 1 Mr. Bentley with Mrs. Barlow
- 2 Mr. Needham with Mabel
- 3 Mr. Needham with Mary Jackson
- 4 Mr. Bentley with Lady Grosvenor
- 5 Mr. Needham with Lloyd's 208
- 6 Mr. Needham with A. McGregor
- 7 Mr. Eyre with Industry
- 8 Mr. Mellor with Queen of England

Byblæmen Breeders.

- 1 Mr. Bentley with Elizabeth Pegg
- 2 Mr. Bentley with Thurstan's 212
- 3 Mr. Bentley with Talisman
- 4 Mr. Needham with Lloyd's Seedling
- 5 Mr. Needham with Elizabeth Pegg
- 6 Mr. Bentley with Ashmole's 126
- 7 Mr. Bentley with Wm. Parkinson
- 8 Mr. Bentley with Thurstan's 248

Class 13. *The Best Breeder Tulip.*—Mr. Needham with Rose Hill.

Butley Tulip Society.

June 8th.

THIS old established society held its seventy-fifth annual show at the Orange Tree Inn, Butley, near Macclesfield, on Friday, June 8th. The flowers were good in quality, and what was better still there were more exhibitors than usual. The date chosen for the show was rather too late for several of the growers, but it just suited Mr. Bentley, who took most of the prizes. As it is without doubt discouraging to smaller growers when one or two big men come and take all the prizes, it was unanimously decided that next year no exhibitor shall be allowed to take more than two prizes in each class. We hope that this new rule will have the effect of bringing more exhibitors, as there will be more chances of success for everybody. The judges, Messrs. Housley (Stockport), Whittaker (Royton), and Chadwick (Butley), made the following awards:—

Silver cup for the best stand of six rectified Tulips, one in each class.—Mr. J. W. Bentley, Stakehill, Manchester, with Sir Joseph Paxton, flamed, and William Annibal, feathered bizarres; Prince of Morocco, flamed, and Foster's Seedling, feathered byblæmens; Mabel, flamed, and Mrs. Atkin, feathered roses.

Three breeders, one in each class.—First, Mr. Bentley with Lloyd's 47, Alice Grey, and Rose Hill. Second, Mr. J. Hague, Stockport, with William Wilson, Janette, and Mabel. Third, Mr. A. Moorhouse, Wakefield, with Sir Joseph Paxton, Janette, and Mrs. Barlow.

Single blooms. Feathered bizarres.—First, Mr. C. W. Needham, Hale, Cheshire, with Magnum Bonum. Second, Mr. Bentley with William Annibal; third, with Samuel Barlow. Fourth, Mr. Needham with Sir Joseph Paxton. Fifth, Mr. Bentley with Jas. M'Intosh. Sixth, Mr. Needham with Typo. Seventh, Mr. Bentley with Lord F. Cavendish. Eighth, Mr. T. Buckley, Staleybridge, with William Wilson. Ninth, Mr. Bentley with Attraction.

Feathered byblæmens.—First, Mr. W. Dymock with John Hart. Second, Mr. Buckley with Couingsby. Third, Mr. Needham with Talisman. Fourth, Mr. Bentley with Mrs. Jackson. Fifth, Mr. Needham with Elizabeth Pegg. Sixth, Mr. Bentley with Bessie; seventh, with Martin's 117; eighth, with Bertha; ninth, with William Bentley.

Feathered Roses.—First, Mr. Bentley with Heroine; second, with Mrs. Atkin; third, with Miss Edwards; fourth, with Alice; fifth, with Sybil; sixth, with Mrs. Collier; seventh, with Julia Farnese; eighth, with Modesty. Ninth, Mr. Needham with Annie McGregor.

Flamed Bizarres.—First, Mr. Needham with Sir Joseph Paxton. Second, Mr. Bentley with Samuel Barlow. Third, Mr. Needham with Dr. Hardy. Fourth, Mr. Bentley with Merit. Fifth, Mr. Needham with Sir Joseph Paxton. Sixth, Mr. Bentley with San José; seventh, with Lea's Seedling; eighth, with Sulphur; ninth, with Lord Stanley.

Flamed Byblæmens.—First, Mr. Bentley with Adonis; second, with King of the Universe; third, with Talisman; fourth, with Adonis. Fifth, Mr. Dymock with Lord Denman. Sixth, Mr. Bentley with Malakoff; seventh, with Salvator Rosa; eighth, with Lady Franklin. Ninth, Mr. Buckley with Trip to Stockport.

Flamed Roses.—First, Mr. Bentley with Mabel; second, with Madame St. Arnaud; third, with Annie McGregor; fourth, with Mabel; fifth, with Hepworth's 25/62; sixth, with Tryphena; seventh, with Minerva. Eighth, Mr. Moorhouse with Aglaia; ninth with Rose Hill.

Bizarre Breeders.—First, Mr. Bentley with Lloyd's 47; second, with Goldfinder. Third, Mr. Needham with Dr. Hardy. Fourth, Mr. Moorhouse with Sir Joseph Paxton. Fifth, Mr. Hague with Lloyd's 216.

Rose Breeders.—First, Mr. Bentley with Rose Hill; second, with Mrs. Barlow; third with Mabel; fourth, with Annie McGregor; fifth, with Madame St. Arnaud.

Byblæmen Breeders.—First, Mr. Bentley with Surpass le Grand; second, with Martin's 117; third, with seedling 1/00; fourth, with seedling 2/00; fifth, Mr. Hague with Alice Grey.

Selfs.—First, Mr. Bentley with White Model; second, with Buttercup.

Premier Feathered Flower.—Mr. Bentley with William Annibal.

Premier Flamed Flower.—Mr. Needham with Sir Joseph Paxton.

Premier Breeder.—Mr. Bentley with Rose Hill.—J. W. BENTLEY.



Fruit Forcing.

Cucumbers.—Any pits or low houses that have been used for forcing Strawberries, Vines in pots, or wintering bedding plants may be utilised for growing a late supply of Cucumbers. The plants may be grown in pots 12 inches in diameter, or larger, draining them well, and only partly filling them with compost, so as to leave space for fresh additions, or they may be grown in shallow boxes or troughs about 18 inches wide, and 7 inches deep, they being easily improvised on the staging. A wood or other trellis may be provided with little trouble at about 15 inches from the glass. No fire heat will be necessary, the house being closed between 3 and 4 P.M., syringing then, and damping the floors and other surfaces in the evening, also in the morning, but not then syringing the plants, it often being the cause of great injury to the foliage. Admit a little air at 75°, and allow the temperature to rise to 85° or 90° with sun, and close early, never later than between 80° and 85°; if the temperature rise afterwards to 90° or 95°, or even 100° all the better. Train with a single stem to the trellis, rubbing off all laterals to that height, then allow them to grow, pinching the leader after it has advanced about two-thirds across the trellis. The laterals may be stopped one or two joints beyond the show for fruit, covering the trellis evenly without overcrowding.

In the Cucumber house fire heat will only be necessary to prevent the temperature falling below 65° at night and to insure 70° to 75° by day. Attend well to stopping the shoots, removing bad leaves, thinning the old growths, and watering with liquid manure about twice a week. Sprinkle some sweetened horse droppings on the bed once or twice a week to encourage surface roots, and occasionally a little soot may be used, both of which give a deep green colour to the foliage and fruit.

Pit and frame Cucumbers may be watered about 4 P.M., closing then, or earlier, according to the weather, but it is not advisable to close so early as to raise the temperature above 90° or 95°. Liquid manure may be given occasionally, but it is not desirable to apply it over the foliage, or too frequently. Keep the growths fairly thin, thinning out old shoots and encouraging others in their place so as to keep up a succession of bearing wood. Stop one or two joints beyond the fruit. Avoid overcropping and allowing the fruit to remain on the plants a day longer than can be helped. Shade only to prevent flagging, and admit a little air early as a safeguard against scorching.

Vines.—*In Pots.*—Stop those for fruiting next season when from 6 to 8 feet in length, and pinch the laterals and sub-laterals to one joint as produced. Obtain as much stored up matter in the Vines as possible by judicious feeding and cleanly foliage fully exposed to light and air. Vines intended for planting should be kept in comparatively small pots, and in that case they will not make a large amount of lateral growth which need not be closely pinched, but it is better to stop at the first joint, and afterwards not allow the sub-laterals to interfere with the principal foliage.

Late Grapes.—These must be thinned immediately they are large enough, the berries swelling so rapidly at this season that they soon become too large to be thinned properly and expeditiously—besides, when the work is deferred too long the size of the fruit is impaired. The laterals must not be allowed to extend so as to interfere with the principal foliage. The growth may be permitted to extend where there is space for its full exposure to light, but not otherwise, as overcrowding and overcropping are often the causes of indifferent results, and more frequently so than any other error of culture. Remove all superfluous, badly placed, deformed, or small bunches. Crop lightly, which means size, quality, and high finish; bulk signifies small fruit, bad colour, poor quality, often shanking, and always non-keeping. Water thoroughly when necessary; one good watering is worth many dribbets. Afford top-dressings of chemical manures occasionally, and a light mulch of sweet lumpy manure will prove beneficial in most cases by encouraging surface roots and maintaining uniform moisture.

Grapes Scalding.—Muscat of Alexandria and Lady Downe's are more liable to "scald" than most other varieties, but Hamburgs, Gros Maroc, and even Alicante sometimes suffer severely when completing the stoning process, and in some seasons at a much earlier stage, this year being one of them, we having received examples at thinning size and also when swelling fast after thinning. The only preventive is early ventilation, as it is keeping close, moist, and cold that renders Grapes liable to scald if the weather prove bright. In the early stages a temperature of 60° to 65° at night, 70° to 75° in the daytime, leaving a "crack" of air at the top of the house at night, and increasing the ventilation by or before the sun acts powerfully upon the house, is a certain means of avoiding scorching and scalding. When the Grapes are about completing the stoning process, and from then until they are advanced in colouring, air should be given abundantly, sufficient warmth being kept in the hot-water pipes to maintain a night temperature of 65° to 70°, and 5° to 10° more by day, leaving venti-

lation on at night, and increasing it before the sun acts powerfully upon the house in the morning.

Grapes Ripening.—Afford these a free circulation of air on all favourable occasions, with enough constantly to insure a change of air, as it is a confined atmosphere that does the mischief in Grapes "spotting" and "cracking." Keep sufficient heat in the pipes to maintain a night temperature of 65°, and 70° to 75° by day, with 80° to 90° through the day from sun heat. Avoid a very dry atmosphere, damping occasionally, and do not allow the border to become dry. Moderate lateral growth will favour Hamburgs and Madresfield Court, but Muscat of Alexandria colours best when exposed to the light, yet a little lateral growth is desirable as a safeguard against shanking and for the maintenance of healthy root action.

THE BEE-KEEPER.

Work in the Apiary.

ALL is now activity in the apiary, the majority of colonies are in good condition, and if we are favoured with fine weather for a month or six weeks, bee-keepers will have no reason to complain of the result of the honey harvest. Stocks are not as forward as usual, as dull weather and cold winds were experienced throughout the month of May, and it was only those colonies which received careful attention during that time that are now storing a surplus. It is many years since there was such a wealth of blossom as during the past few weeks. The different fruit trees have all flowered well, and only a few of the late flowering Apples remain. Many of our forest trees have bloomed much more freely than is usual. The Thorns are now a sheet of bloom, and the bees will derive a much greater benefit from the May than if they had flowered earlier.

Field Beans are now in bloom, and should they be within two miles of the apiary the bees will work much more freely on them than on any other flowers open at the present time. The honey obtained from the above sources when mixed is brown in colour, somewhat coarse in the grain, but of good flavour. Attention should be given to all stocks on the lines mentioned in previous notes. Colonies that were too weak a fortnight ago for supering ought now to be strong enough. Honey is coming in freely, and if this operation is delayed much longer less honey will be stored than if they had received attention at the right time.

Bees Swarming.

Although the modern bar frame hives have to a certain extent done away with the system of increasing the number of stocks by allowing the bees to swarm, we cannot hide the fact that there are numerous stocks in straw skeps in various parts of the country. With these swarming is a necessity, and the earlier the swarms are obtained the greater the chance of obtaining a surplus. In our own apiary we practise both systems. As bees invariably winter well in straw skeps it is often an advantage to have some early swarms. Swarms work well, and if obtained early a surplus may be procured from them.

The earliest swarm in this district (South Yorkshire) came off on the 27th of May. The warm weather experienced on the 3rd and 4th inst. caused many bees to swarm. These, if well managed, will give a good account of themselves. Should the weather become dull and cold such swarms must be fed with thin syrup.

Where frame hives are at hand it is advisable to place the swarms in them. It will be an advantage to give them full sheets of foundation, and not more frames than they can cover well; six frames will be ample for an ordinary swarm weighing about 4 lbs. The division board should be placed close up, and as soon as the cells are all drawn out another comb may be inserted in the middle of the brood nest. This can be repeated as often as may be considered necessary. If the honey season is likely to be a short one it will be an advantage to keep the brood nest reduced, and place a crate of sections on the top of the frames. If honey is coming in freely the bees will commence to store a surplus at once.—AN ENGLISH BEE-KEEPER.

Leaving Sections on in Winter.

WHILE agreeing with "An English Bee-keeper" on general topics, as to the desirability of putting sections on when "honey is coming on freely," I may say that in several cases which have come into my hands to manage I have found crates of sections filled and ready to take off (before the bulk for the season had been put on) from leaving on through the winter, and with very little covering. I have already taken off some beautifully filled sections from a crate left on all the winter, which, if I remember rightly, the bees did not enter last summer, although "honey was coming in freely" at the time I put them on just in the Clover harvest. So we have to "live and learn" from experience.—J. HAM.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Thinning Grapes (I. F.).—An article on this subject will appear in an early issue, probably next week.

Peaches Mildewed (A. A. T.).—The spots on the Peaches should be rubbed with flowers of sulphur, and the trees afterwards dusted in every part, preferably by means of a bellows apparatus. This must be done without delay, as the skin once injured by the parasite seldom heals over, or a dark patch is formed and the fruit swells irregularly. It is desirable to allow the sulphur to remain on for a few days before again having recourse to syringing. The mildew is induced by a cold and dry condition of the atmosphere, especially cold draughts, the conditions prevailing this spring being favourable to the fungus.

Tomato Leaves Diseased (*Idem*).—The leaves are infested by the spot fungus, *Cladosporium fulvum* or *lycopersici*, which is usually due to a close and somewhat moist atmosphere. There is no trace of the Potato disease fungus, *Phytophthora infestans*. The remedy is to, in the early part of the afternoon of a fine day, allow the temperature to rise to 100°, or even 110°, the latter being fatal to the parasites, and the Tomato plants are not materially prejudiced. The house should be kept close for a couple or three hours, and then air admitted, so as to allow the heat and moisture to escape. It is necessary to maintain a buoyant atmosphere, ventilating early in the day, or rather increasing it, for a little should be left on constantly at the top of the house, and this with a gentle warmth in the hot-water pipes in dull periods will prevent a stagnant atmosphere. The worst infested leaves should be removed and burnt.

Vines Cleared of their Crops (*Young Gardener*).—Syringe the Vines occasionally to keep the foliage clean, afford water to render the soil moist, and supply an occasional top-dressing of fertiliser. A light mulching will keep the soil from cracking, as well as prevent the roots going down in quest of moisture. Allow a moderate extension of the laterals, but do not permit them to interfere with the principal leaves. Some lateral extension is absolutely necessary to prevent the starting of the main buds and the premature ripening of the foliage. There is no fear of the wood not ripening, the difficulty is in the opposite direction—loss of foliage and starting into growth instead of going to rest in late summer. Ventilate freely when the temperature rises above 60°.

Carnation "Grass" Diseased (J. J.).—The "grass" is affected by the complaint known as "withering," the leaves dying back from the points or edges, or even from the base. In some cases there is present the spot fungus, *Septoria dianthi*, but in many the microscope does not reveal even so much as a trace of this or another harmful agent. For this reason the disease has been held to be constitutional. The best, and, indeed, only remedy and preventive is the prompt removal of affected plants and burning them. Spraying with diluted Bordeaux mixture has been advised, but the application spoils the appearance of the leaves. The better way is to accord such treatment as conduces to a sturdy habit. In the case of plants liable to have weak "grass" a pinch of common salt applied occasionally to each 6-inch pot, sprinkling on the surface and washed in as in the ordinary course of watering, tends to solidify the growth and render it more disease resistant, not applying more frequently than every six weeks.

Spots on Vine Leaves (S. S. H. Wight).—The spots are occasioned by a very mild form of the Grape anthracnose fungus, *Sphaceloma ampelinum*. As the fungus progresses the growth of the leaf is checked, the parts withering or sometimes falling out, leaving the leaf in holes, or in bad cases the leaves wholly wither. The fungus attacks all the green parts of the Vines, and the light-coloured and white Grapes are the ones most affected, but it seldom infests the berries in this country. The fungus has been successfully prevented on the continent by dressing the Vines early in spring, before the buds start, with a solution of copperas (iron sulphate), 1 lb. to a gallon of water, applying with a brush to the rods, canes, and spurs. In case the disease appears a powder composed of equal parts of sulphur and lime may be dusted on, and this we advise at present, applying with a bellows apparatus such as the Malbec. The advertised fungicides in powder are also good for the purpose. A free admission of air, especially in the early part of the day without causing draughts, with gentle warmth in the hot-water pipes, so as to maintain a circulation of air, and prevent the deposition of moisture on the green parts of the Vines, is useful in preventing the development of the spores of the fungus, as well as fortifying the epidermal tissues against the inroads of the parasite. As the foliage is thin and light coloured we should use a little fertiliser, selecting from the advertised preparations and applying according to the instructions.

Acacia grandis (H. Browne).—This is a very dwarf West Australian species, and flowers freely when small. It is a most charming window plant for spring flowering, being at that season loaded with its golden yellow balls, and at all periods of the year its elegant foliage gives it an ornamental character. Its propagation is effected either by seeds or



FIG. 140.—ACACIA GRANDIS.

cuttings, usually by the latter method; they should be inserted in white sand or very sandy soil, and covered with a bell-glass or tumbler. As they are impatient of damp they require a little more care during the rooting process than those of the leafless species; the inside of the glass should be wiped daily, and as soon as the cuttings are rooted they must be potted in sandy peat, and eventually in good fibrous peat, containing less sand.

Stephanotis floribunda (*Amateur*).—Although this plant does not need shade, a slight covering is beneficial during the hottest part of the day through the flowering season. It prevents the flowers opening too rapidly, and they also last in good condition for a longer period. Plants that are trained under the roof and are growing rapidly should have the young shoots drawn out and allowed to hang down. Some attention is needed two or three times a week, or the shoots soon become twisted together. This method allows of the main shoots being trained more closely under the roof. The shoots that hang from the roof flower profusely, and the plant can be kept much cleaner by a free use of the syringe than when the whole of the growths are closely trained together under the roof. From the present time plants that are in full activity should not be kept too warm, close, or moist. A temperature of 60° at night will be ample with a liberal application of air during the day, this will insure firm growth that will flower well. If the plants are grown in pots and crowded with roots a surface dressing of decayed manure will prove beneficial.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. W.).—1, *Spiraea confusa*; 2, Send when in flower; 3, *Thunopsis Standishi*; 4, *Cedrus atlantica glauca*; 5, *Cedrus atlantica*. (C. P.).—The Rose is the Austrian Copper Brier; the blue flower is *Scilla peruviana*. (J. L. S.).—1, *Limnanthes Douglasi*; 2, *Phlox amena*; 3, *Saxifraga ceratifolia*; 4, *Lonicera sempervirens*. (J. E.).—1, *Saxifraga muscosa*; 2, *Spiraea arguta*; 3, *S. hypericifolia*; 4, *S. confusa*; 5, *Ercilla spicata*. (B. C.).—1, *Ginkgo biloba*, the Maidenhair Tree; 2, *Taxodium sempervirens*; 3, *Cupressus Lawsoniana erecta viridis*.

Covent Garden Market.—June 13th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, Tasmanian...	8	0 to 18	0	Grapes, black ...	1 0 to 3 0
Apricots, box ...	0	8	1 3	Lemons, case ...	10 0 30 0
Cherries, box ...	0	9	1 3	Melons, house, each ...	1 0 2 0
" ½ bushel ...	6	0	15 0	Oranges, case ...	10 0 25 0
" ¼ bushel ...	5	0	10 0	Pines, St. Michael's, each	1 0 6 0
Gooseberries, ½ bushel ...	2	0	2 6	Strawberries, lb. ...	1 6 6 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	3	0 to 4	0	Mustard and Cress, punnet	0 2 to 0 0
Asparagus, green, bundle	0	9	3 0	Onions, bag, about 1 cwt.	5 6 6 6
" giant, bundle	9	0	12 0	" Egyptian, cwt. ...	6 0 0 0
Beans, Broad, flat ...	3	0	4 0	Parsley, doz. bunches ...	2 0 4 0
" Jersey, lb. ...	1	0	0 0	Peas, Jersey, lb. ...	0 9 1 0
" Long Pods, ½ bush.	5	0	0 0	" French, pad ...	2 6 3 6
Beet, Red, doz. ...	0	6	0 0	" English, bushel ...	8 0 10 0
Cabbages, tally ...	5	0	7 6	Potatoes, cwt. ...	5 0 10 0
Carrots, doz. ...	3	0	4 0	" new Jersey, cwt.	12 0 15 0
" new, bunch. ...	0	3	0 4	" Teneriffe, cwt. ...	12 0 14 0
Cauliflowers, spring, doz.	4	0	6 0	Radishes, long, doz. ...	0 6 0 0
Celery, bundle ...	1	0	1 9	" round, doz. ...	1 0 0 0
Cucumbers, doz. ...	2	0	4 0	Shallots, lb. ...	0 3 0 0
Endive, doz. ...	1	6	2 0	Spinach, bushel ...	2 0 0 0
Herbs, bunch ...	0	2	0 0	Tomatoes, foreign, doz. lb.	4 6 5 6
Leeks, bunch ...	0	3	0 0	" English, doz. lb.	6 0 7 6
Lettuce, doz. ...	0	6	0 0	Turnips, bunch. ...	3 0 4 0
" Cos, score ...	1	3	2 6	" new ...	0 4 0 8
Mint, green, doz. bunches	2	0	0 0	Vegetable Marrows, doz. ...	6 0 8 0
Mushrooms, lb. ...	0	8	0 10		

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2	0 to 3	0	Mignonette, doz. bunches	2 0 to 3 0
Asparagus, Fern, bunch. ...	2	0	2 6	Narcissus, double white,	
Carnations, 12 blooms ...	1	6	2 0	doz. bunches ...	4 0 8 0
Cattleyas, per doz. ...	0	0	12 0	Odontoglossums ...	5 0 7 6
Eucharis, doz. ...	4	0	6 0	Pelargoniums, doz. bnchls	8 0 12 0
Gardenias, doz. ...	1	6	2 6	Roses (indoor), doz. ...	2 6 3 6
Geranium, scarlet, doz.				" Red, doz. ...	2 0 4 0
bnchs. ...	6	0	9 0	" Safrano, doz. ...	2 0 3 0
Iris, various, doz. bnchs.	6	0	15 0	" Tea, white, doz. ...	2 0 3 0
Ixia, doz. bunches ...	3	0	4 0	" Yellow, doz. (Perles)	3 0 4 0
Lilium Harrisii, 12 blooms	3	0	4 0	" Maréchal Niel, doz.	6 0 12 0
" longiflorum, 12 blooms	3	0	4 0	" English (indoor):—	
Lilac, white, bundle ...	3	0	4 0	" La France, doz. ...	3 0 6 0
Lily of the Valley, 12 bun.	6	0	18 0	" Mermets, doz. ...	3 0 8 0
Maidenhair Fern, dozen				Smilax, bunch ...	4 0 6 0
bunches ...	8	0	10 0	Tulips, Parrot, doz. bnchs.	4 0 8 0
Marguerites, doz. bnchs.	3	0	4 0	" yellow, bunch.	1 0 1 6
" Yellow doz. bnchs.	3	0	4 0	" bronze, bunch.	1 0 1 6

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12	0 to 24	0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36 0	Genistas, per doz. ...	8 0 15 0
Aspidistra, doz. ...	18	0	36 0	Geraniums, scarlet, doz. ...	6 0 10 0
Aspidistra, specimen ...	15	0	20 0	" pink, doz. ...	8 0 10 0
Azaleas, various, each ...	2	6	5 0	Hydrangeas, white, each	2 6 5 0
Boronias, doz. ...	20	0	24 0	" pink, doz. ...	12 0 15 0
Orotons, doz. ...	18	0	30 0	Lily of Valley, per pot ...	1 0 2 0
Dracæna, var., doz. ...	12	0	30 0	Lycopodiums, doz. ...	3 0 6 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	8 0 10 0
Erica various, doz. ...	8	0	18 0	Mignonette, doz. ...	8 0 12 0
Euonymus, var., doz. ...	6	0	18 0	Myrtles, doz. ...	6 0 9 0
Evergreens, var., doz. ...	4	0	18 0	Palms, in var., each ...	1 0 15 0
Ferns, var., doz. ...	4	0	18 0	" specimens ...	21 0 63 0
" small, 100 ...	4	0	8 0	Spiræas, per doz. ...	8 0 12 0
Ficus elastica, each ...	1	6 to 7	6		



Too Tasty.

A FLAVOURLESS article of food is poor, insipid eating. There are far too many cooks who fail in the art of seasoning. They will make hashes and stews and meat pies that appear to be absolutely guiltless of salt or pepper, and then at the same time they will sadly overdo the spice pot in the matter of delicate dishes that take flavouring all too easily. What they lack is judgment; they have not well balanced minds or the gift of proportion. There are likes and dislikes in the matter of seasonings and flavour, but we fancy most of us are at one on the subject of our milk and butter—possibly it is that because to have butter and milk with any flavour except the pure milky taste is an offence against the canons of good taste!

We are writing on the evening of June 1st. Business led us to the butter market of a great city. Butter was raling from 7d. to 9d. per lb. of 16 ozs., and late in the day much was still on sale. Some was certainly oily looking and messy, other lots looked as fresh as though just out of the dairy. One young man was standing penknife in hand, offering tastes of his wares to passers by; we were invited, but the penknife was not tempting, and we thought the young man affirmed too much. Many of the market women bring with them huge bunches of "Laylock" and other strong smelling flowers—Lilies to wit—also herbs of all sorts, particularly the flavouring varieties, and these travel in close proximity to the butter. By afternoon the atmosphere of the butter market is—ahem! The women need refreshment, and in the centre is a stall, plenty of hot tea and cakes of all descriptions. Add to this a packed crowd, baskets of poultry, the flowers and the herbs, and you get as grand a mixture as you can wish for. Did not Douglas Jerrold say there were seventy-nine distinct smells in Cologne besides the celebrated water? We wonder how many he could have counted to-day, and the cold N.E. wind was blowing strongly. Fancy how it would be with a high temperature and soft genial breezes. We went from the butter market into the Free Library, where an elderly market woman was devouring "Truth" (Labby's, we mean), and close under our nose was her packet of provisions. We sniffed once—that was enough—we detected not the bread but its accompaniment, and we did *not* want to go home with her to tea.

There is blame somewhere—there is cause or causes for this condition of things. Some of the causes are preventible, others are not so. As milk is the foundation of all butter, we will go to the fountain head—the cow. Is she in good health? Is there any germ of disease about her? At what stage of milking has she arrived? The first few days after calving her milk partakes of a medicinal character, Nature's own provision for the good of the calf; such milk should not be set for cream. Then again, when she is getting stale the milk loses some of its good properties, and will not make the best of butter. What about the housing, the feeding, and the general surroundings? There are many cow houses no inspector ever sees, and it might be awkward for the owners if he did. The old idea of closeness and warmth is not exploded yet. Have warmth by all means, but let there be fresh air with it. The New Zealand plan of rugs for cows is not at all a bad one; it might make the cow-keeper less fearful of a pleasant breeze.

The water supply should be purity itself. Is this always so? The food varied—wholesome and not too strong flavoured Turnip tops; outside leaves of Cabbage and the like are not desirable. A Garlic or Onion eater is not good company at close quarters as we all know. At this time of the year we are or ought to be free from

any anxiety respecting the cow's diet. She is turned out on to the fresh young grass, which the genial sun has caused to spring up on all sides. The day of hand food is over. She selects her own salad. Well, poor thing, the outlook to-day is not very grand. A prolonged spring, not a poet's spring, but like one described by Dickens, is still with us, not a feature of summer, unless we except the drought, herbage scanty, and bitter nights—not at all ideal weather for the secretion of milk. The cow must eat; she has a big frame to support, and therefore she picks about here and there, and like the locusts devours every green thing that comes in her way. At night she vainly tries to seek shelter under hedgerows or trees, the very worst places to find sweet and wholesome food. She will be very lucky if she does not get hold of some strong flavoured morsels. She will lose condition herself, and the milk suffers at once. If pastures will not grow weeds will. Not only weeds will attract, but sundry and divers buds and shoots on hedges and trees—some may be wholesome, others very undesirable. Some of our readers will recall a passage in a novel of modern days by a well-known writer, wherein is described the consternation of a dairyman who finds his milk Garlic-tasted; how all the men and maids (and an angel) were sent out with spuds or knives and took every inch of pasture ground. It was a slow and expensive process, but it was that or loss of milk customers. We have never had Garlic in our own pastures, but found a patch once hard by the gate of one of the home fields, where cows passed daily. There is practically no means of removing the taint from the milk when once there. The only way is by efficient refrigeration to prevent it getting worse. Passing the milk twice over the refrigerator will also aerate or oxygenate it.

But there are many ways by which milk becomes tainted that are quite preventible. It is the old story of cleanliness; we are always preaching it till our readers will tire, but until our noses give us direct evidence to the contrary we must stick to our old text. It is no use to assert butter and milk are sweet and good if the evidence of the nose is against it. Boiling water, not hot, scalded utensils well purified by the breath of Heaven, are the main factors. Listen to a few directions respecting the pails. First rinse in warm water, then clean inside and out with a brush and hot water, using some soda if necessary, and afterwards scald with boiling water, and leave exposed to the air in a clean place. No use to put clean vessels where there are foul odours. Strainers, defective pails—i.e., badly made, with rough joints, or even little holes—are all sources of danger. The scrubbing brush and washing cloths are often themselves in need of cleansing, and are frequently, alas! neglected. It goes without saying that the water must itself be pure and fresh.

To enter upon the question of the actual manufacture of the butter would require too much space. To minimise labour cream is often kept far too long. Overripe cream can never produce first class butter. Supposing the butter churned in a perfectly clean wholesome churn, then comes the task of freeing from buttermilk and working, not too long. It is quite a usual fault with amateurs to be too anxious. They work their butter so long and so zealously that it becomes "oily" and "salvy." Others again are not careful to get rid of first the butter milk, secondly the water that has been used to wash. That is all very well if customers can be persuaded to buy butter, milk, and water at so much per ounce; but the butter will not be good, and therefore will not command a first-rate price.

It is no use to make good butter and then spoil it by contact with strong smelling articles, or by keeping it in an unwholesome place. It is want of care in small details that does so much to spoil our butter as a whole. It is the old story of "for want of a nail," and we cannot wonder that the English farmer loses his butter customers when we find how often the article is "too tasty."

Work on the Home Farm.

The wind still keeps in the north-east, and we have very little sunshine. Crops are not suffering exactly, except from the fact that they are losing time, and harvest is being put further back day by day. Many farmers are crying out for rain, but all long for more sunshine

and warmth—some of last season's heat. Can the heavy expenditure of powder in South Africa have affected our weather? We have heard it suggested.

More local examples of Charlock spraying keep coming under notice. Sulphate of iron is used in some cases in place of sulphate of copper. It is cheaper, but requires a much stronger solution to be effectual. It is said to do less injury to the young corn shoots, whilst being quite as effectual on the Charlock.

There has been rather a serious loss amongst young calves lately. Some farmers invariably lose calves in the spring, and seem to expect it, but this time the loss has been more general, one old neighbour, usually lucky, having lost a dozen. We fancy the flush of grass has much to do with the scour which causes the mortality, the active reason for the scour being overfeeding. More calves are killed by having too much milk than by having too little. Alternate doses of cholera mixture and castor oil are the only medicines worth using.

The scarcity of labour will no doubt have a tendency to induce farmers to sow Turnips on the flat where ridging has been usually practised. On some soils flat drilling is desirable on account of the greater certainty of getting a plant in dry weather, but we do not like putting large quantities of artificial manure in, with or immediately underneath the seed. For one thing, the residuary influence of this manure is apt to show itself too much in a sort of ridge and furrow appearance in the next crop, and we do not think the young Turnips are benefited by the near presence of a highly concentrated manure, especially a nitrogenous one. We should prefer broadcasting the manure either by hand or drilling.

Potatoes must be earthed up as they become ready. Very large growers use a light one-horse plough, and go over the ground twice, a horse hoe set very narrow being run between the ridges before the second earthing. Old ewes will now pay for a bit of cotton cake; what is not repaid in milk for the lambs will give a return in mutton, which is not likely to be cheap this season. A pen should be arranged with hurdles, to which the lambs only have access, and they can be treated and educated to a little choice mixture of lamb food whilst their dams are discussing the coarser material.

Prices of Sheep.—In the prices of fat sheep in London, the record of the year and several recent years was broken recently, when wethers sold up to 9½d. per lb., carcase weight, sinking the offal. But for some weeks the top price has been higher at Liverpool than in London, 10½d. per lb. having been the top price all through May in the latter market.

Winter Feeding of Cows.—A discovery which caused some surprise to the Newtonrigg officials was made in connection with some experiments on the winter feeding of cows. The rule at the Cumberland Farm School is to discontinue cake when a cow's yield of milk sinks to a gallon a day. During the very severe weather of December it happened that the housed Swedes were used up, and the snow prevented the bringing of others from the field. As a temporary expedient Mangolds were given to the cows for a week, but only to half the extent that Swedes had previously been supplied. The resultant manure was very much softer, as was anticipated, but quite unexpectedly the milk yield of the whole herd rose, although the weather was very cold and wet; moreover, the supply has continued higher than would have been looked for from cows on the natural decline in milk yield. Mr. Lawrence therefore concludes that the medicinal effect of the Mangolds on the cows which had been under liberal treatment for winter dairying was to put the system of the animals into better working order, and thus improve milk secretion.

Manuring Hops.—The results of Dr. Bernard Dyer's elaborate experiments in the manuring of Hops have demonstrated the fact that nitrate of soda is a particularly effective manure, and large quantities of it have been employed with profitable results and without apparent evil effects. As much as 10 cwt. of this foreign manure has been used on 1 acre with beneficial consequences, the profits from this heavy allowance exceeding those obtained from the light dressings from 2 cwt. upwards. Dr. Dyer does not advise the continuance of nitrate of soda on this lavish scale, however, but considers 4 cwt. per acre a safe and serviceable dressing for general use. He is emphatic in urging the early application of manures of this class. Contrary to the theory advanced in some quarters he holds, and has confirmed his contention by practical demonstration, that the crop utilises and appreciates the manure best in its earlier stages of growth. The manuring process should begin as soon as vegetation starts in spring, and be completed by the end of May at the latest. Another point strongly enforced by Dr. Dyer is the necessity of applying a liberal dressing of a phosphatic manure in any circumstances, with or without farmyard manure, and independently of the form of nitrogenous manure employed. For calcareous soils he recommends 8 cwt. per acre of superphosphate, but for soil lacking in lime basic slag, bone dust, or guano would probably be better. For medium land superphosphate and one or other of the other substances named should be used in alternate years. Potash salts are not requisite when farmyard manure is used, but should be included when artificials only are available.—("Morning Post.")

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Journal of Horticulture.

THURSDAY, JUNE 21, 1900.

The Journal of Horticulture can be obtained from the Office, 12, Mitre Court Chambers, Fleet St., London, post free for a Quarter, 3/9. Editorial communications must be addressed to 12, Mitre Court Chambers, Fleet Street, London.

The Season of Flowering Trees.



THE extensive planting of flowering trees and shrubs in pleasure grounds is practically a modern custom. If you wander through an old time garden that has never been renovated or added to, the chances are that you will find a wealth of green, fine ornamental trees of the Conifer class, with perhaps some variegation in foliage, but little bloom beyond that provided by the Chestnuts, Limes, and trees of similar character. The old landscape gardener had a tendency to cover the walls with Wistarias, Magnolias, climbing Roses, and the rest, but with him the shrubbery garden was the place for foliage alone, and few flowering trees had a place there.

Possibly there are several reasons for this, but one is that he had not the material at his command. The flowering trees and shrubs which we now possess are mostly modern creations which have been introduced during recent years, and by their advent they have brought about material changes in the formation and appearance of pleasure grounds. Nor have they taken the place of older ornamental trees, for the green adornments of the garden are as popular as ever they were, but the flowering trees break down the monotony of the everlasting green, brighten the sombreness of it all, and add a ray of showy colour which is rendered more delightful by the presence of the verdure. If evidence is wanted of this, go anywhere you like where a new garden is being made, or an old one renovated, and I venture to assert that flowering trees and shrubs will be well represented. They are prime favourites, these trees that bloom, and have worked their way into gardens fashioned centuries ago, where they are as much appreciated as in the small enclosure which surrounds the modern villa.

Evidence is not wanting to show that if the landscapist of a past decade had been furnished with this material, he would have used it with advantage, and it was more from necessity than choice that his shrubberies were evergreen. The

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other day, when walking through a nobleman's garden, I observed some gnarled old relics of the common white Hawthorn, resplendent with pearly "May" blossoms. I learned that many years ago, when the hedges in the fields were broken up to form the garden, Thorns here and there were left standing for the sake of their flowers, and to-day they remain worthy ornaments of the garden, though only trees of the hedgerow; and I venture to assert that if the scarlet and crimson Thorn had then been obtainable, they would have been represented as well.

Just now, the first week of June, the garden is more beautiful than it can ever be again this year, for the simple reason that the trees and shrubs are blooming. Our bedding plants have yet to come on. Roses are only in bud, and there is a succession of herbaceous flowers to carry us through the season; but just now the trees and shrubs provide the show, on a scale gigantic and gorgeous. I will not attempt to particularise the many trees and shrubs which help to make the garden so beautiful at this season of the year. They are common most of them, and well known, though one is at a loss to understand why they are not more widely planted.

Take the Lilacs for instance, purple and white. They have long been popular, and no flowering plants are more worthy of a place in the shrubbery garden than these. Charming to look at, sweet to smell, they are amongst the floral gems of closing May and early June. They are seldom out of place, and are admirably suited for planting as a background for borders of herbaceous plants and low ornamental shrubs. They are common it is true, and so is many another flower that is altogether indispensable.

Then there is the yellow Laburnum, now so gay with flower. Could any pleasure ground be considered complete where it is not represented? I doubt if there is any other tree so effective as this when clustered with its bunches of golden yellow blossoms. Look at it in the distance when the evening sunlight plays on the blossoms. Let a bank of green form the background, with a sombre Conifer on this side and that—the golden Laburnum shines out from its canopy of verdure with a show of grace and splendour, and you realise at once the effectiveness of a combination of flowering and evergreen trees.

I have already spoken of the white Hawthorn which is allowed a place in some gardens, and is now beautifying miles of hedgerows in every county. Looked at from any point of view I doubt if we shall find any tree more beautiful when in full bloom than the wild Hawthorn of copse and woodland. It is perhaps because it belongs to the woodland that it is debarred from many gardens, but we have the double crimson and pink forms now full of blossom, rather more aristocratic, and well suited for garden adornment. Perhaps no one forms a shrubbery border nowadays without including a few of these double Hawthorns, and I should like to see more of them. The bright crimson is a colour quite unique, but when planting these trees there should be no crowding up in corners and places where there is no room for expansion. The crimson Thorn makes a fine specimen, and when standing cut alone on a lawn or elsewhere.

Another flowering tree, none too often seen in shrubbery borders, is *Pyrus malus floribundus*. Its full beauty is seen just before the flowers are quite expanded, and the crimson of the petal tips are then seen to perfection. The blooming capacities of this tree are remarkable, and this possibly keeps it from developing quickly into a large specimen.

I would say a word, too, in favour of coloured foliage trees, which, year by year, become more popular. There is still too much sameness in our shrubberies, and we want more colour in the shape of Copper Beeches and Hazels, Golden Elders, *Acer negundo variegata*, and the richly tinted Japanese Maples. These and other coloured foliage trees are now bright and beautiful in their summer garb; the flowering trees, of which I have only mentioned a few, as well as the large family of shrubs, including the Rhododendrons, Azaleas, Berberises, are all now playing a part in making June time the brightest month in the garden year.—G. H. H.

Rock Gardening.

MANY of the lesser but most beautiful of our alpine and herbaceous plants, whilst growing, perhaps, fairly well in the ordinary borders, never appear to advantage in that position, and without constant curtailment of their more aggressive neighbours are often doomed to disappear in the struggle for existence. Some of these are essentially rock plants whose habitat is the clefts and crannies of the natural rock; others are so eminently adapted to the same associations that their claims to a similar position may well receive the consideration they deserve; and the whole comprises such variety, interest, and beauty that a rock garden, even of the simplest kind, forms a particularly pleasing feature in any garden.

To many the making of rockeries is contemplated as a somewhat serious matter, one not to be lightly undertaken, hence it is often not undertaken at all. Especially is this the case with those whose artistic taste and cultured eye beget an abhorrence of anything pertaining to a sham resemblance of Nature. That it is so is not a matter for surprise when evidence exists of ambitious attempts resulting only in glaring absurdities, as ill adapted to the lowly life of an alpine as they are to adorn a garden, and the initial expense incurred must, too, be included.

In rock gardening the welfare of the plants with a more natural disposition of them than usually obtains should be the first consideration, and the simplest arrangement of any stones peculiar to the locality is the safest and most satisfactory means to the end in view. No happier example of its kind could be seen than the rock garden at Mrs. Gibson Black's pretty residence, Clontarf, co. Dublin. It must, indeed, prove a revelation to many whose acquaintance with the subject is practically limited to the orthodox planting in bed or border. Some considerable portion of an old-fashioned garden has here been devoted to the subject; and though the whole may be seen at a glance on entering the enclosure formed by a thick hedge on one side, and a wall on the other, hours may be spent in wandering through the informal walks which intersect the spacious area forming such a brilliant *coup d'œil* at the time of our visit.

It was the time of Tulips, Gesneriana, and macrospela in glowing masses of colour being conspicuous in the background of the rock-bound beds, whilst ever and anon clumps of the pure self-coloured Darwinia enlivened the scene. The exact width of these informal beds cannot be given, but they appeared to be of such dimensions as facilitated the operation of weeding from either side without treading upon them. Beyond an occasional weeding a rock garden of this description when once formed and planted appears to involve no further labour save such labours of love as are entailed by the introduction of newcomers to the happy family, or some little attention to particular favourites. The edgings to the beds are formed by stones keeping within bounds the soil raised above the level from 1 to 2 feet, through which other stones are irregularly distributed.

At the time of our visit the prostrate growing Phloxes, represented by *P. Nelsoni*, *P. frondosa*, and others, were sheets of bloom, whilst similar habited plants comprising Saxifragas, *Tymuses*, the lesser Campanulas, with many choice alpine, often appearing to exist only on sufferance elsewhere, formed undulating cushions of luxuriant health and surpassing beauty, to those at least who love these floral gems. Though irrelevant to our subject, mention must be made of a large specimen of the Magnolia-leaved Laurel seen in the pleasure grounds, but other objects of interest apart from it are reserved for future notice. In a momentary return to the text, some choice bits of alpine must be noticed which have been comfortably accommodated with pockets on the cool side of an old wall. The pleasure of our visit was much enhanced by the intimate knowledge of the subject displayed by Mr. Humphreys, Mrs. Black's able gardener, and further still by the company of a friend who dearly loves an argument over such matters in which he is keenly interested, but who had, fortunately, left his shillelagh at home.—K., Dublin.

**Dendrobium Dalhousianum.**

At the meeting of the committees of the Royal Horticultural Society, held in the Drill Hall on the 5th inst., Orchids were not very numerous; indeed, they were not expected to be, following so closely upon the Temple Show. There were, however, several plants of exceptional interest, and amongst these must be included the hybrid *Dendrobium Dalhousianum*, of which a flower is represented in the illustration (fig. 141). It will be seen that in the new corner, whose parentage is made quite clear in the specific name, we have the colour and size of a good variety of *D. nobile*, while the presence of *D. Dalhousianum* is shown in the flattened lip and the strength of the plants. *D. Dalhousianum* was exhibited by Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart, Burford Lodge, Dorking, and was recommended for an award of merit by the Orchid Committee.

Cattleya citrina.

We have few *Cattleyas* that vary so little in colour as this fragrant species. The only variations I have seen are a whitish margin to the lip in some flowers, and a dull brown tinge to the petals in others. This may be owing to the absence of bright colours on the labellum, as when growing wild bees and other insects are attracted by these colours on many varieties and cross fertilisation thereby effected.

Some persons have expressed a doubt as to whether this *Cattleya* can be successfully grown in an upright position. There can be no reason why it should be so grown. To keep *C. citrina* in health frequent spraying is very helpful, and Nature has provided a means whereby the superfluous water is carried off. The flowers, too, are shown to greater advantage when growing naturally. After flowering this species should, if possible, be induced to rest awhile by keeping cool and rather dry at the roots in the *Odontoglossum* house. When it is seen to be starting into growth the cool end of the *Cattleya* house is the best position for the plants. Here they may remain until the flower sheaths appear, usually early in the new year, when cooler quarters will again be advisable.

C. citrina will grow well on bare charred blocks or on blocks lightly dressed with sphagnum. They must be wired on firmly, and look best if suspended at an angle corresponding with the roof of the house in which they are growing.—H.

The Phalaenopsis at Home.

It may be of interest to growers to know under what conditions the *Phalaenopsis* grow best in their native land, so that a method of cultivation which will suit them best may be afforded. Newly imported plants are the best for cultivation. It is often the case that plants, which succeed well with one grower, will give an entirely different result if transferred to another place, and from this standpoint fresh imported stock is to be preferred.

In order to give the grower a proper idea of the climatic conditions of the Philippine Islands, I think it best to describe their situation. These islands extend from the 5th to the 18th degree northern latitude; they are bordered on the east by the Northern Pacific and on the west by the China Sea, being visited by north-east winds from October till May, and from south-west winds from May till October. Both winds carry rain with them, which reaches the parts of the islands nearest to them. While one side has rain, the other is absolutely dry. The limit of these rains is the mountains which traverse the islands from south to north; but it would not be right to think that the rains do not pass this limit, all depending on the force of the wind. Through these circumstances the mountains have a continuous moisture, more or less, according to the winds; and in the valleys of this region grow the *Phalaenopsis*. I do not want to say that it pours continuously in these valleys, although it happens that during a typhoon the rain will last for fourteen days. Otherwise rain is about the same as in Europe, only that the rainy period is steady for a few months. There are also very hot days, oftentimes weeks, without any rain whatever.

To speak again of *Phalaenopsis*, I will say that these plants are found especially on the driest places, and only grow on the highest branches, where the winds and the sun rays can strike them best; on low branches and on the lower stems of the trees *Phalaenopsis* are rarely found. The want of air and light and too much moisture soon kill the plants in such places, and on this account few large plants are to be found. Plants which are too low, or in places overgrown with creepers, soon die. Air and light are the principal conditions for

the welfare of the *Phalaenopsis*. Bees and other insects carry the seeds from tree to tree, and there is a constant vegetation. The period of rest seems to be only a short time after blooming. All plants are strong, the weaker plants seeming to be overgrown by stronger ones.

We will consider now the transferring of the plants from the woods to the greenhouse, the collecting and establishing before the plants come into the hands of the grower. During this period plants suffer greatly. *Phalaenopsis* rarely, or rather never, are troubled by insects or scales in their native habitat, but if a collector does not look after the plants while they are in the hands of the natives the buyer will not get any healthy ones and experience more trouble than the whole business is worth. There are especially two insects from which *Phalaenopsis* suffer terribly; one is a red fly that deposits her eggs in the leaves or the heart, and the other is a scale, which is on the wood to which the *Phalaenopsis* are tied. The presence of the red fly is easily discovered. The leaves look as if punched with fine needles; they get pale, and the whole plant becomes poorer and poorer. Plants infested with these flies should be brought to the light and dipped into hot water every day till all the flies are dead. Scales must be carefully washed off.

Phalaenopsis Sanderiana is often attacked with a trouble when it comes from the woods. The leaves show small holes. It seems as if a butterfly deposits its eggs into the leaves, and after a time a worm comes out. It is the best to cut off all such leaves. The plant does



FIG. 141.—DENDROBIUM DALHOUSIANUM.

not suffer at all as long as there are healthy roots on it. A grower cannot be careful enough in inspecting newly imported plants before they are potted, as it is absolutely necessary to have clean stock, if good results are expected.—(Translated for the "Florists' Exchange" from "Möllers' Deutsche Gärtner-Zeitung.")

Orchids for Beginners.

BEGINNERS in Orchid culture are often at a loss to know what kinds are most suitable to commence with. A succession of bloom throughout the year, as far as practicable, is usually desired, price has also to be considered, and those plants chosen that are easiest to grow. The species and varieties named below will make a very interesting collection.

Oncidium are essentially Orchids for beginners, their only drawback being a somewhat limited range of colour, most of them containing a good deal of yellow. Their long-lasting qualities, however, combined with freedom of flowering, will always secure them a prominent place in collections. *Oncidium crispum*, *flexuosum*, *sphacelatum*, *incurvum*, and *varicosum* of the warm house section, and *O. cucullatum*, *O. concolor*, *O. macranthum*, *O. Marshallianum*, *O. ornithorhynchum*, and *O. tigrinum* of the cooler species will be found a good selection.

Among the *Odontoglossums* it is difficult to know where to stop, as there is hardly a species that may be called difficult to cultivate, and all are beautiful. *O. crispum*, *O. cirrhosum*, *O. luteo-purpureum*, *O. maculatum*, *O. odoratum*, *O. Pescatorei*, *O. Rossi*, and *O. triumphans* are all sterling cool house varieties, and where a slightly higher temperature is maintained *O. citrosum*, *O. grande*, and *O. vexillarium* may be added. *Cattleyas* *Trianae*, *Percivaliana*, *intermedia*, *Mendeli*, *Mossiae*, *Gaskelliana*, *labata autumnalis*, and *Bowringiana* will provide a succession of flowers nearly the whole year through. Among the *Laelias* *anceps*, *purpurata*, *harpophylla*, *Perrini*, and *autumnalis* are all worthy of a place.

When judiciously managed *Dendrobiums* add greatly to the

attractions of the Orchid house in the spring, and *D. aureum*, *D. nobile*, *D. Pierardi*, *D. densiflorum*, *D. thyrsoflorum*, *D. chrysanthum*, *D. Farmeri*, and *D. Wardianum* are only a few of the many good kinds this genus affords. *Cypripediums barbatum*, *insigne*, *venustum*, *superbiens* (fig. 142), and *Sedeni* are easy Orchids to grow, and keep in flower for a long period, the last named species being seldom out of bloom. *Masdevallias Harryana*, *igneae*, *Lindeni*, and *Veitchi* are very bright and effective when in flower. *M. towarensis* is the only white *Masdevallia*, and it may be mentioned here that the bloom spikes of this species ought not to be removed, as they produce flowers several years in succession. *Cymbidium Lowianum*, *Epidendrum vitellinum*, *Lycaste Skinneri*, *Coelogyne cristata*, *Phaius grandifolius*, and *Pleioncs lagenaria* and *maculata* are all useful and popular. *Calanthes Veitchi* and *vestita*, and *Zygopetalum Mackayi* are three good winter-blooming Orchids.

All the species named can be easily wintered in the same house. Sufficient piping should be provided to maintain a minimum of from 45° to 50°. The *Cattleyas* and *Calanthes* ought to have the warmest place, while the *Odontoglossums*, cool *Oncidium*s, and *Masdevallias* may occupy the coolest position. During the summer these latter will, of course, need less heat than the other occupants.—R.

A Disused Quarry in the Engadine.

It was a favourite playground of mine this disused quarry, unattractive enough to mere passers-by, but we wondered what treasures it might hold, and a bush of *Rosa alpina*, gay with such fairy loveliness of palest pink and tender green, tempts us one day to clamber up the stony slope. Above this we see that long grass has grown over the stones, and here we find a plant of *Gentiana lutea* not yet out, also *Epilobium* in great quantities. About 30 feet higher we discover a very fine plant of *Rhaponticum scariosum*, the flower standing 4 feet from the ground, and some of the leaves at the base are 12 inches long and 3 or 4 wide; they are of a dull green colour, and have a silvery lining.

For a closer inspection we scramble over rough stones deceitfully covered with grass, and only just escape trampling upon a beautiful plant of *Thalictrum aquilegifolium*, with its red and golden tassels shimmering in the sunlight. The *Aconitum napellus* is also here, and round the old stump of a tree we find the *Campanula barbata* and a *Centaurea* rich with blue and violet. Scrambling on a little higher the delicious scent of *Daphne striata* meets us; this lovely pink flower is creeping through the grass, its tough little branches adhering firmly to the rough ground.

And now we feast our eyes upon a vision of loveliness. The white *Ranunculus platanifolius*, first attracts us, spreading its slender branches in all directions, giving itself quite an air of importance. Another favourite, the *Arnica montana*, casting a golden glow around it, while the pale yellow *Anemone alpina* is standing sturdily between the stones. Further on, to the south side, we see white Lilies, *Anthericum liliago*, bending their graceful heads, and the *Lilium martagon* in great numbers and of all shades from darkest red to palest pink, even to white, looking as strong as though they were guarding their delicate companions. These nestle more closely round the shelter of a huge boulder, the slabs of which are covered with fine short grass, and contain treasures of most varied colouring. Large tufts of *Dianthus alpinus* adorn each corner of the rock, and *Phyteuma Scheuchzeri* stands out of every available crack, so perfect in beauty with its one pointed leaf close to the flower; while its little grey companion, *Globularia nudicaulis*, softens the surrounding ledges.

When specimens of these are safely in our tins we clamber up, breaking our nails with holding on, and after two or three backward slips we pull ourselves on to a shelf of rock and find we are side by side with the Orange Lily, *Lilium bulbiferum*. This queen of wild flowers must have our attention for a few moments. The quality of its petals, the brilliant colouring and graceful foliage are a study of perfection, and we are filled with intense admiration and wonder as we realise that no human hand has helped it to attain this beauty, but it has grown in God's own garden, and has been nourished and reared by His Almighty care.

Behind us we see *Dracocephalum Ruyschiana*, a very rare plant, and of a dark metallic blue. We also find a specimen of white, and here to our left stands the little mauve Aster, *Erigeron alpinus*, behind which is a plant of *Bupleurum stellatum*. Right before us now we see a carpet of dark blue *Gentiana verna*, and standing out like silver stars on the extreme edge of the rock is *Edelweiss*. This much-coveted flower would satisfy some, and bring their little research to an end; but behind this we alight on to a piece of ground covered with short grass, and here we hope to find some earlier little friends, the snow only having just melted.

The first to appear is the fascinating *Anemone pulsatilla*, looking as though it had not yet left off its little overcoat of feathers. *Gagea lutea* is also here, although nearly over; and large patches of bright

pink *Silene acaulis*; and again of richest blue from *Gentiana acaulis*; then the delicate turquoise of the dwarf *Myosotis*. One more little treasure comes in our path with its softly blended pink and brown, *Geum rivale*. No doubt many other favourites are here, but we are quite content and satisfied with our forty minutes' scramble in a disused quarry.—E. N.

Reminiscences of An Old Florist—No. 8.

I HAVE already described my reminiscences of one of the great events of the sixties, as far as horticulture is concerned, in the opening of the Royal Horticultural Society's gardens in South Kensington, and how it raised expectations which were doomed to bitter disappointment. There was, however, another event, unique in its character and far-reaching in its influence on horticulture, which took place during the same period—I mean the holding of the great International Horticultural Exhibition of 1866. I have attended many horticultural exhibitions, both at home and abroad; but I do not hesitate to say that I have never seen one comparable to this. It was held at South Kensington, and the ground occupied nearly 4 acres, which was covered by a magnificent tent, so as to afford a view unobstructed by any unsightly erection. The laying out of this space had been entrusted to the late Mr. Gibson, the accomplished gardener, who had done so much to raise Battersea Park to the high position that it occupied under his superintendence. Those who frequented the Royal Botanic Society's exhibitions of those days at Regent's Park used always to say that the undulating character of the ground and the terraces of green turf on which the plants were exhibited combined to make a scene of most exquisite beauty. Well! this exhibition was that of Regent's Park multiplied twentyfold.

It was called International, but there were few foreign firms which competed, and nearly the whole weight of the exhibition fell upon the shoulders of our home growers, and well did they sustain it. Of course in my reminiscences I do not expect to enter much into detail, or to draw any contrast between it and the exhibitions of the present. Those were the days when large plants covered with a profusion of flowers were in vogue, and never shall I forget the astonishment of some of our foreign friends when they stood before the magnificent pot Roses of Mr. Charles Turner, or the Pelargoniums of Mr. Charles Turner, or of Mr. Bailey of Shardeloes, and the Azaleas of Mr. Fraser or Mr. Kinghorne. They were undoubtedly marvels of cultural skill, although their artistic excellence might be well questioned. Then, too, was witnessed the dawning of the taste for alpine and herbaceous plants, which has so developed of late years, and of which Messrs. Backhouse & Sons of York were the pioneers.

In looking back upon that exhibition one cannot fail to be struck with the fact that so many who were then foremost on the scene have passed away, and in like manner that many of the flowers are no longer of interest to those who once cultivated them, owing either to the change of fashions or to the improvement in the flowers themselves, the older varieties being superseded by newer ones of better character. Thus, for instance, I remember well a grand specimen in a pot of the Rose Comtesse Cecile de Chabrillant, which was then a great favourite, but which an exhibitor would now be almost afraid to put into a box, even in a front row, on account of its size. The arrangements were all admirable, but there was one thing over which the committee had no power, and which in this variable climate of ours goes a long way, I mean the weather.

Day after day the rain descended, and the guarantors, on whom all the re-responsibilities for the expenses rested, began to feel that their money was likely to be wanted. If, indeed, the exhibition had closed on Saturday night, as was originally intended, there would have been a large deficit; but the late Sir Wentworth Dilke, who was the chairman of the society, invited the exhibitors to meet him, and they agreed to let their exhibits remain until the Thursday following. Owing to this, that which would have been a severe defeat resulted in a complete victory. The weather improved, the price of admission was lowered to one shilling, visitors thronged the grounds, and when the accounts were made up they showed, when all the expenses were paid, a substantial balance in hand: £1000 were given to the Gardeners' Royal Benevolent Institution, and with the balance the Lindley Library was purchased. The only other exhibition holding its place in my memory which was at all comparable to this was one which was held at the opening of the ill-fated Alexandra Park, but it had not the grand features of this unique exhibition.

During the same period I had the opportunity of visiting many of the leading private and professional establishments which had gained for themselves a name by the excellence of their gardens, as well as the more humble establishments where some favourite florist

flower was cultivated. I thus became well known to many in the horticultural world whose acquaintance stood me in good stead when I had more important matters to attend to, and from one and all I received, with rare exceptions, the utmost kindness and consideration. I went down, for instance, to Stapleford to see that ardent and successful florist Richard Headley, who had made his name famous among all Auricula growers by his well known Geo. Lightbody. He was also a very successful Tulip grower, but I remember he had one

many who were associated with me in those days there are few whose memory is more often with me than that of that genial and warm-hearted florist. I went with him as judge to Spalding and other places, and the times we passed together were very pleasant.

I also remember paying a visit to an amateur near Sevenoaks, but whose name I now forget, and saw a beautiful collection of rectified Tulips. I fear that it would be very difficult now in the neighbourhood of London to find such a collection; indeed, the

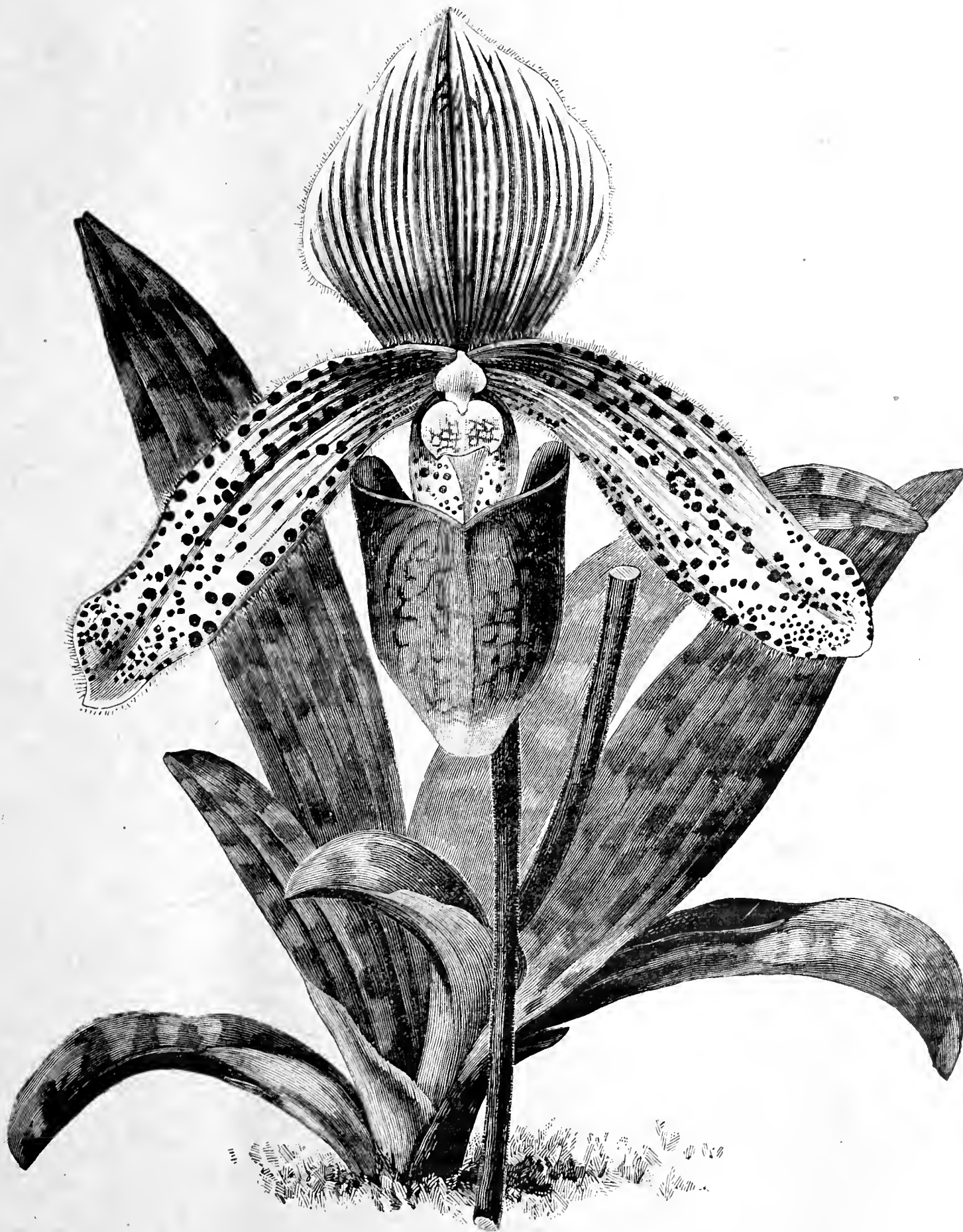


FIG. 142.—CYPRIPEDIUM SUPERBIENS.

curious notion, which I believe no one accepted but himself, that a portion of his Tulip beds were every year destroyed by some former servant whom he had dismissed.

At this time, too, I ventured to try and revive the taste for florist flowers by establishing the Metropolitan Floral Society; but after one or two attempts I found there was no response at that time sufficient to meet the requirements of such a society. My friend the late Mr. James Cutbush was of valuable assistance to me, especially at one exhibition we held at the Alexandra Palace. Amongst the

collapse of Tulip growing in the South is one of the remarkable things connected with floriculture which has taken place in the last half century. Of course they are very troublesome and expensive; nor do they present a very striking appearance when placed on the exhibition table. The blooms, when fully expanded, look as if they were past their best, and all the paraphernalia connected with them do not contribute much to the appearance of the garden. I was never myself particularly enamoured of the Tulip, though I could appreciate their brilliant and stately beauty when successfully grown.—D., Deal.



Rose Show Fixtures in 1900.

- June 27th (Wednesday).—Salisbury (N.R.S.), Richmond (Surrey),* and Southampton.*
- „ 28th (Thursday).—Canterbury, Colchester, and Isle of Wight (Ryde).
- „ 30th (Saturday).—Maidstone and Windsor.
- July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
- „ 4th (Wednesday).—Croydon, Ealing, Farningham, Hereford, Reigate, and Tunbridge Wells.
- „ 5th (Thursday).—Bath, Norwich, and Sutton.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Harrow and Wolverhampton.†
- „ 11th (Wednesday).—Brockham and Formby.
- „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
- „ 13th (Friday).—Ulverston.
- „ 14th (Saturday).—Manchester.
- „ 17th (Tuesday).—Carlisle.
- „ 18th (Wednesday).—Cardiff.*
- „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
- „ 21st (Saturday).—New Brighton and Newton Mearns.
- „ 24th (Tuesday).—Tibshelf.
- „ 25th (Wednesday).—Newcastle-on-Tyne † and Belfast.*
- „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

Indoor Roses.

PLUNGE Hybrid Perpetuals in pots in a sunny position if they have been thoroughly hardened for turning outside; if not carefully prepare them before placing them out, so that the whole of their foliage can be preserved in good condition. The soil about the roots should be in a thoroughly moist condition when they are plunged, and very little labour will be occasioned in watering afterwards, provided the plunging material is kept moist, and the plants liberally syringed twice a day. Under these conditions they will soon commence in earnest the formation of fresh roots, and a good top growth will result. If this be encouraged it will add strength and vigour to the plants, whereby they thoroughly recruit themselves for the following season. Those potted in autumn in 6 and 7-inch pots, and brought forward in cold frames, may if they have flowered and grown well, be transferred into pots 2 inches larger. These may then be plunged outside. By potting these plants now they will become thoroughly established, and be in the best possible condition for flowering early under glass another season. Those that have not yet bloomed should be kept as cool as possible so that the supply will be continued until blooms are plentiful outside.

No artificial heat will now be needed for the Roses under glass. Abundance of air must be given during the day or the temperature of the house will rise too high and the plants become infested with red spider. A free sturdy growth must be encouraged by syringing the plants liberally and keeping them supplied with water at their roots. Weak stimulants may be given with advantage every alternate time water is needed. With care and good treatment the plants will continue growing and yield for some time a bountiful supply of flowers. Tea Roses in pots that have done duty since last November may be thoroughly hardened and stood outside or plunged; the latter is decidedly the better. Young stock potted in autumn from the open ground, or small plants on their own roots that have been in cold frames up to the present time and are just coming into flower, may occupy the side stages of the greenhouse. As soon as the first blooms are removed from these plants they may be repotted if they are healthy and have done well. Under these conditions they will grow rapidly and make splendid plants by autumn, and can then be allowed to come into bloom to maintain the supply when those outside fail. Not only will they yield useful material for cutting at that dull period of the year, but if pruned moderately hard back will flower profusely again during the months of March and April.

Young plants of Tea Roses rooted this spring may be placed into 6-inch pots and grown from this date under glass. The flower buds

as they appear should be removed, so that the young plants have an opportunity of gaining strength and vigour. These will be also found most useful in autumn, and will continue to flower until Christmas. When ventilation is abundant aphides are perhaps more troublesome than at any other period of the year. The plants must not become infested, or their growth will soon be brought to a standstill. The quickest method of eradicating these pests is to fumigate the house with tobacco smoke directly they make their appearance.—PRACTICE.

Tea Roses in Summer.

HAVING been very successful with Tea Roses last season, a few notes may be acceptable, as my collection comprises many of the best varieties in cultivation. The system carried out was the means of allowing me to cut on an average six dozen good blooms every morning from early in July until about the second week in October. We often hear the remark passed when Tea Roses are not looking or thriving very well that they will not succeed in the soil, or the position is not quite right, when it is only rational attention which is required.

The ground the Tea Roses were planted on was well drained, and the soil worked into good condition by bastard trenching, with the addition of some well-decayed manure. The Roses were planted when the soil was in good order, and a shovelful of turfy loam was placed about the roots of each. The pruning was performed about the middle of April, and the beds were then mulched with some partially decayed manure. When the plants had started into growth, and the shoots had grown about 2 inches, I made it a practice to go over every plant twice a week to disbud the shoots where growing too thickly and destroy aphides. If the least trace of aphides was seen the shoot was dusted with tobacco powder, and once a week until the first blooms appeared they were syringed with soapsuds.

The weather having become dry every plant received 3 gallons of water a fortnight, and the latter part of the season liquid manure. When the first bloom buds appeared, and all through the season, I took off every one which would not be required, as it is very unwise to leave buds that would not be open when the blooms were ready for cutting; and by picking off these useless buds, as it were, extra vigour is thrown into those which are left, and every Rose can be cut with one or two healthy green leaves and a length of stem suitable for any purpose. If any of the flowers were fully open in the morning I cut them rather than let them remain to exhaust the plants and blooms which were to come. By following the above practice the plants grew to a large size, and were continually blooming until stopped by cold nights.—H. A.

Some Good Roses.

AMONG all the classes of Roses there are some which are considered more than usually good, the flowers being models of shape, colour and form. For rich velvety colours, including crimson, red, pink, blush rose, and white, the Hybrid Perpetuals are perhaps the best. That beautiful old Rose Abel Grand produces blooms which are remarkably clean in colour, which is a beautiful, silvery, and glossy rose tint. Alfred Colomb, of a bright, almost fiery red, is one of the best dark Roses. Baroness Rothschild is a delicate pink variety. The flowers are finely formed, and among Roses of the same colour it takes a leading place. Duchess of Edinburgh is another fine light variety similar in colour and build to the variety La France. The latter is now classed as a Hybrid Tea. Camille Bernardin, in addition to its beautiful bright red colour, bordered white, has the quality of sweetness. Dr. Andry and Duke of Edinburgh are exceptionally good dark Roses. The first named is a brilliant red, and very constant, while the latter is usually, when at its best, of a brilliant vermillion. The blooms are of good shape, large, and full.

Etienne Levet is a variety which can present us with fine carmine red blooms of good form and large size. Général Jacqueminot, though an old Rose, is unsurpassed. Large and magnificent blooms of a brilliant scarlet crimson colour are produced. It is useful for all purposes. Horace Vernet is a good reddish purple. Louis Van Houtte is a grand variety of velvety crimson colour. Pierre Notting takes rank as one of the best dark reds, and Prince Camille de Rohan is an intensely dark velvety crimson. In contrast to the last four Madame Clemence Joigneaux, a rosy lilac variety, is excellent, and possesses all the qualities of a good Rose. Marie Baumann is one of the best and most perfectly formed Roses in cultivation; its colour is bright crimson.

Of white Hybrid Perpetual Roses Madame Lacharme, Merveille de Lyon, and Coquette des Branches are the best. The best Noisette-Roses are undoubtedly Maréchal Niel, which is the grandest yellow Rose known; and W. A. Richardson, a beautiful orange yellow colour, almost perfect in beauty and form before opening, but not much good when fully expanded.—E.

The Flower of St. Helena.

Maligned St. Helena.

LOCALITIES, like persons, may suffer defamation for very insufficient reasons, and the island of St. Helena, owing to the fact of its having been selected as a safe place for the deportation of Napoleon Bonaparte, has gained notoriety at the cost of its good name. The posthumously sainted Corsican was in 1815 an object of hatred not only to every nation in Europe, but to all those French people uncorrupted by the gold and pinchbeck glory of his short-lived Empire. When the powers hesitated to shoot him, everyone was interested in getting him safely locked up at such a distance from his partisans, that his diabolical genius for intrigue (which more than equalled his military ability) might operate ineffectively. Here the obese, undersized, and quite undignified "plunger" of monarchs fretted away the remaining six years of his life, bullying his suite, quarrelling with Sir Hudson Lowe, posing as a martyr to the European peoples, and misrepresenting the beautiful island of his residence as a veritable Black Hole of Calcutta.

Hysterical Bonapartist litterateurs have since woven an absurdly heart-rending legend of the Imperial Eagle chained to what they call the pestilential rock of St. Helena. Not to mince phrases, this is all the veriest "buncombe," a foretaste of the methods of our Americanised cheap press of to-day, which strains itself to the bursting point in creating a wave of mendacious sentimentalism. Having thus rehabilitated Bonaparte's memory and blackened the character of St. Helena, the French Chauvinists of sixty years ago succeeded in recovering the ashes of their little Moloch, and ostentatiously deposited them in the Invalides at Paris among the people whom, as Bonaparte sardonically observed in his will, "he loved so well"—i.e., as the epicure loves the oyster.

Its Appearance and Climate.

Had it not been for his policy Bonaparte would, perhaps, have done justice to St. Helena, as he was fond of gardening (*sic*), and might frequently be seen working outside his bungalow in the hills first at The Briars and then at Longwood. St. Helena, like Hong Kong and some West Indian Islands, rises precipitously from the sea much in the same way as some of the western isles of Scotland, and while these fragments of our Empire present none of the aspect of placid tropical luxuriance peculiar to Polynesia, they are far from resembling such cinder-holes as Ascension and Aden. They are, indeed, more like Madeira and the Canaries.

The appearance presented by St. Helena on nearing it is not prepossessing. The fore cliffs tower up from 1000 to 2000 feet barren and sombre in a sort of rampart, except where intersected by savage gorges or glens running down to the sea. Of these the gorge at the mouth of which Jamestown, the capital, lies is the chief, and through it access is obtained to the highlands. There are, roughly speaking, two zones of climate, the one tropic summer (from 68° to 86°), and the other temperate summer (from 56° to 76°). The former prevails at Jamestown, which is "stuffy," but a few minutes serves to transport the visitor to an altitude where flourishes a vegetation not unlike that extending from the Pyrenees to Piedmont. This has nearly all been

introduced during the last 250 years, and from having a rather jejune native flora the island has now come to possess a sort of microcosm of botanical variety.

Bonaparte's Prison.

It is in this upper region surrounded by a moist but temperate summer air, nestling in bold declivities, and approached by roads penetrating some fifty square miles of rocky and romantic scenery that the bungalows stand where the sainted Corsican moped and died of an hereditary disease. For one who had several times rained upon his species the beneficent majesty of a huge prairie fire kind, confinement in such Arcadian surroundings must have proved very tedious, and though horticulture might serve to kill time, it must have seemed tame sport in comparison with Russian retreats and killing men on the scale of Borodino, when at the end of the day 80,000 lay dead or writhing "in one red burial blent." Poor, bored Bonaparte!

In refutation of the Bonapartist slander regarding "the pestilential rock of St. Helena," let us hear what some less prejudiced narrators have to say about it. "When you travel three miles inland you see undulating pastures of the richest green and orange tints, interspersed with woods and Fir plantations, and here and there beautifully wooded glens leading to the sea. The climate is almost perpetual summer. Snug looking country houses lie embosomed in leafy valleys, and trees and flowering shrubs from almost every country grow luxuriantly." And again, "If you stroll out early in the morning you see the path bordered with Roses glistening with dew. Fragrance, light, colour, are everywhere. There are banks of wild Fuchsia in ruddy bloom, great bunches of Heliotrope, with Sweet Briar and Myrtle; vigorous trees of red and white Camellia, in which children are swinging, or overlaiden Peach trees in which they sit eating to their heart's content."

Native Flora.

The native flora of St. Helena when occupied by the Portuguese in 1501 is said to have consisted of some fifty species, twenty-three of which were Ferns, and not a single Grass. There was a belt of some two miles extending round the

island, on which grew only the *Salsola salsa* (Camphire), *Commidendron glutinosum*, and the Prickly Pear (*Opuntia*), but great forests consisting of two species of *Dombeya* extended from this belt to the interior. These, however, have now receded far inland, owing to the action of goats and insects which have been introduced, and can still be noted in course of decay. Among other native plants may be mentioned a *Frankenia*, a *Melissa*, *Erodium sempervivum*, *Commidendron rotundifolium*, *Acalypha rubra*, a *Petrobium*, a *Hedyotis*, two *Nesiotas*, three *Wahlenbergias* and some composite plants called locally "Gum-Wood" and "Cabbage Trees." *Dicksonia arborescens* grows near Diana Peak, and in places the rare *Dombeya erythroxylon*, with its red and white pendent flowers, while in rocky spots the *Phyllica rosmarinifolia* casts a shadow in which no other plant is found to flourish.

Imported Flora.

As regards the imported flora, the list is an astonishing one. It includes all ordinary English vegetables and garden fruits, Peaches



FIG. 143.—ARUM LILIES IN ST. HELENA.

Grapes, Figs, Filberts, Cocoanuts, Dates, Mangoes, Loquats, Custard Apples, and many of the trees, shrubs, and flowers peculiar to Southern France and Piedmont. Conspicuous among the last is the splendid Sage, scarlet Geraniums, and *Richardia æthiopica*. This latter has been taken as the emblematical flower of St. Helena, where, as shown in our illustration (p. 527), it grows in the greatest profusion. The following remarks, kindly sent by Mr. Luckhurst, together with the photograph, will shed further light upon the foregoing description.

"At the Cape, Madeira, and St. Helena the *Calla æthiopica* grows wild literally by the acre, and I well remember when my daughter went to St. Helena, some six years ago, an expression of delight in one of her letters at being able to gather the flowers of this old favourite by the handful. She has also made frequent mention of the marvellous variety of scenery and vegetation in the forty-seven square miles which comprise the area of this small island. Palms, Bananas, and other tropical fruits and flowers flourish in the lowlands, and on the hills there grow Fir trees and Gorse, while wild Strawberries are to be found in their spring, which corresponds to our autumn."

After perusing the evidence, one may safely say that by tamely surrendering to the English people, whom he most hated, Bonaparte escaped his deserts; and that the so-called "prison," to which our so-called "brutal" Government relegated him, was no pestilential rock, and afforded him a more peaceful ending than that to which he condemned at least two million of his fellow men.

Thinning Grapes.

It is difficult to give plain directions about thinning Grapes, for first there is that of the bunches, it being practically impossible to estimate how many bunches individual Vines should carry, as this is determined by their health and constitution. As a rule 1 lb. of Grapes to every foot run of rod, the Vine being on the spur system, is a good crop, and if on the extension mode that weight of crop per half a square yard of trellis occupied by the Vine. In thinning the bunches of free-setting varieties, such as Black Hamburgh, every second bunch on each spur should be removed before the flowers open, and all others which it is desirable to remove as soon as the flowers are set. Those retained will always be the most compact, promising, or well set, and they have the advantage of the entire energies of the Vines. If in addition the berries also are thinned early, there is every prospect, other conditions being favourable, of their attaining full size and finishing well.

The thinning of the berries requires a keen eye to discern what and where to cut, and a quick and steady hand so as not to injure the berries retained. To thin properly the operator should be provided with a small forked stick, about 6 inches long, with which to hold the bunch firmly, and also a pair of Grape scissors. The bunch must be trimmed into proper shape, and then first remove the inside berries, next all the small ones, and then the side berries. The expert will do the preliminary work very expeditiously, cutting off two or more useless berries at a time, and then regulate the remainder to the required distance apart. This will take a practical hand about five minutes per pound of Grapes, calculating the ultimate ripe crop.

A bunch of that weight, or even a 2 lb. one, may not require to have the shoulders tied up, but with larger it is frequently desirable, and so spread out the bunch. Some loop the shoulders up to the trellis with S-shaped pieces of thin wire of the requisite length, while others prop the shoulders from underneath with little pieces of wood. Ordinary cultivators rely on the thinning, the berries being so left that as they swell they lift each other up, and thus compact clusters are secured. The point to be attended to is, to so thin the berries that the bunches when ripe and cut will remain firm and compact, whilst every berry has been allowed room to develop freely to its full size. Thus a well finished bunch of Grapes has the berries compact, yet not so much so as to be wedged out of natural shape.

As regards distance of leaving the berries apart to secure the foregoing result, we have found that the Muscadine and Frontignan varieties should have the berries about three-quarters of an inch apart. Sweetwater Grapes, such as Black Hamburgh, require free thinning at the point of the bunch, and little beyond small berries removed from the shoulders. Indifferent setting varieties, such as Buckland Sweetwater, sometimes only require the small berries taken out; while Foster's Seedling needs free but not overthinning, the berries being oval. Muscats should have the small stoneless berries removed, in the first instance commencing when the properly fertilised are the size of peas, and the ultimate thinning should leave the berries about an inch asunder, as the berries are long and tapering, and do not therefore require such severe thinning as the large round-berried varieties. The vinous Grapes are generally large. Gros Colman ought to have the berries thinned to about 1½ inch apart; Gros Maroc to about an inch at the point of the bunch, but more sparingly at the top. Alicante and Lady Downe's ought to be left about an inch, as they have short footstalks, and do not lengthen out. West's St. Peter's should be left a little closer. Gros Guillaume having large bunches requires to have the berries about an inch asunder, but in compact bunches they must be more severely thinned. Finally, bunches

intended for late keeping should be more freely thinned (leaving few berries in the centre) than those for early use.—G. A.

BEFORE commencing to thin the berries each Vine should have the superfluous branches cut off, so that those retained may be distributed as evenly as possible over the whole surface. This not only adds to the appearance of the house when the fruit approaches maturity, but also enables the Vines to perfect a greater weight of fruit than they are able to do when cropped heavily in some parts and lightly in others. In selecting the bunches it should be borne in mind that it is not always the largest that are the best. Those of good shape, short in the shoulder, with even berries, are preferable to larger examples which have only mere size to recommend them; but if they have the good qualities already defined, the larger they are the better. It is always a difficult matter to determine exactly the weight of crop each Vine will perfect. The health and vigour of Vines must be taken into consideration. Generally 1 lb. of fruit to every foot run of rod is a safe crop to leave on Vines in good condition, but many cultivators leave considerably more, and with the aid of high feeding finish the fruit perfectly.

Medium-sized compact bunches seldom require the shoulders to be tied up, but others of larger proportions are much improved by the practice. Long shoulders will require two or three ties each to keep them in position and prevent the stems from being cut by the weight of the berries as they increase in size. This part of the work being done, thinning the berries should commence. While doing this the bunches may be steadied with a smooth thin stick held in one hand, while the other deftly guides the scissors in cutting out the berries. Commence by thinning those at the base of the bunch freely; two-thirds generally require cutting out; those retained should be as even in size as possible. It will generally be found that the central berry of each small cluster is best, and the only one necessary to leave in the lower part of the bunch. As the operator approaches the top they should be left closer together, as the berries of those varieties with long footstalks force each other upward and outward as they increase in size, and thus fill up the shoulders.

A very frequent mistake made in thinning bunches with long footstalks is to cut out too many berries near the top. When this is done the bunches often look very well while hanging on the Vines, but when cut and placed on the exhibition board or the dessert dish, instead of retaining their form the shoulders spread out in consequence of their want of solidity. The aim of the thinner should be to allow every berry just room to fully develop, and yet form a solid mass when cut. To be able to accomplish this a knowledge of each variety is necessary, as not only do they vary to a great extent in size of berry, but the footstalks also differ in length and stiffness, and they must, therefore, be dealt with accordingly.

Muscat Hamburgh, Muscat of Alexandria, and Mrs. Pince frequently produce many stoneless berries. These should not be thinned quite so early as most other varieties; if left till the berries are about the size of Marrow Peas it is not difficult to see which are likely to swell freely. The small berries should be first cut out, and the others thinned to form compact bunches. If gaps occur in any part the berries around should be left a little closer, and the chances are they will quite fill up the blanks by the time the Grapes are ripe. Black Hamburghs invariably set well, and ought to be thinned freely at the base of the bunch, but scarcely any require removal from the shoulders, except in the case of very compact bunches.

Gros Colman and Gros Maroc both produce very large berries, yet they require different treatment when thinning. The first named has short sturdy footstalks, and the berries are produced freely on the shoulders. Bunches growing on strong Vines not heavily cropped ought to have the berries thinned to 1½ inch apart, in fact this grand Grape requires thinning more freely than any other variety. Gros Maroc requires thinning nearly as much at the point of the bunches, but the top should be sparingly thinned, as it is a frequent occurrence to see this variety with loose shoulders, as the footstalks are long at that part. Foster's Seedling, though not usually producing very large berries, still requires thinning freely, the footstalks being short, and the berries generally very plentiful. Buckland Sweetwater, as a rule, should have less thinning than any Grape I am acquainted with, and rarely requires any but the stoneless berries to be taken out. Large bunches of Gros Guillaume also need little thinning, but much attention ought to be given to tying up all the shoulders, and every cluster containing four or five berries. If treated in this way bunches which appear loose and ungainly develop into grand solid specimens.

Madresfield Court should have nearly all the berries removed from the centre of the bunch, as they rarely have room to develop, and are dangerous if cracking should take place, because they cannot easily be noticed till decay begins. Although the berries of this fine Grape swell to a very large size, those forming the outline of the bunch do not require such severe thinning as many might think, because they are long and tapering rather than great in diameter. Trebbiano often produces very large bunches with loose shoulders. These may be much improved in shape by crossing them at the top, and in some cases coiling them round the footstalk of the bunch. Golden Queen is a good setter, produces very fine berries, and should be thinned freely. Alicante and Lady Downe's ought to be thinned to about an inch apart, as the stems are short and sturdy and do not lengthen out.—D.

NOTES & NOTICES

Recent Weather in London.—The weather has been particularly fine during the past few days, though there has been no return of the intense heat. Monday afternoon was very warm, but each evening was pleasantly cool. On Tuesday the conditions continued unchanged, and Wednesday was showery.

Royal Horticultural Society's Richmond Meeting.—We are requested to state that the committees of the Royal Horticultural Society will meet at 11.30 at Richmond on Wednesday, 27th inst., and members will have to sign their names in the attendance books at the entrance.

Gift of a Park to Blyth.—We are informed that the Home Secretary, Sir Matthew White Ridley, has given a large piece of land to the Blyth District Council to be utilised as a park by the residents of that seaport. The Home Secretary is the lord of the manor, and his generosity is greatly appreciated.

Ousting Foreign Fruit.—The crop of English fruit and vegetables coming to Covent Garden promises to be unusually abundant this year. The quantity of Gooseberries already in the market is so great that the sale prices are lower than they have been for many years. Kent Strawberries have begun to arrive, and on Thursday so many came up from Southampton that prices dropped one-half. The supply will be regular and daily expanding for the next few weeks. The price already reached is so low as to render further importation of the French fruit unprofitable. When the height of the harvest arrives it is anticipated that Strawberries will be obtainable at an unusually low figure.

The Resistance of Seeds to Heat.—Mons. E. Schribaux records in a continental contemporary some surprising results obtained in experiments in killing insects among seeds by the application of heat. Weevils were dead after two minutes' exposure at a temperature of 122° and many other insects at 140°. The indications are that this treatment will also destroy the eggs of insects and the spores of fungi, experiments being now in progress to determine these points. The surprising thing about the experiments is the great resistance to dry heat shown by most seeds. It was found that the cereals, excepting corn, withstood a temperature equal to the boiling point of water, for an hour, without their germinating power being in the least affected. The conclusions drawn are that by short exposures to these high temperatures all animal and vegetable parasites may be destroyed without injury to the seeds. In the treatment of grain for the destruction of smuts, alone, this method would be of exceedingly great benefit to the farmer.

America to the Fore.—The famous Hall of the Massachusetts Horticultural Society, on Tremont Street, Boston, has at last been sold and will be torn down to make room for a modern office building. The Horticultural Society some time ago secured possession of a site on the corner of Huntington and Massachusetts Avenues, opposite the new Music Hall. Its area is 22,500 square feet, and the project to build has only awaited the disposal of the old property. Horticultural Hall was built in 1865. The cornerstone was laid on May 18th of that year. The mayor of the city, members of the city government, members of the Massachusetts Charitable Mechanics' Association, the Society of Natural History, the Massachusetts Historical Society, the Institute of Technology, the Massachusetts Society for the Promotion of Agriculture, and the trustees of Mount Auburn Cemetery were in the distinguished company present. The building was dedicated on September 16th of that year. It is of white granite, and the front contains three statues by Martin Milmore, representing Ceres, Flora, and Pomona. In former days the hall was in great demand for fairs, conventions, and various other kinds of meetings. The site of the hall has long been considered one of the most valuable in the city of Boston, as it has the advantage of fronting on three streets. The last assessment of the property was placed at 565,000 dols. of which the building was 71,500 dols. The society was asking 700,000 dols., but it is understood that a less sum was accepted. The present hall has been a very valuable investment for the society.

Lectures at Chiswick.—In order not to clash with the Richmond Show, Professor Henslow's lecture, announced for Wednesday, June 27th, will be given on Tuesday, June 26th, instead.—W. WILKS, Sec.

Rhododendrons in London.—The annual exhibition of Rhododendrons arranged by Messrs. J. Waterer & Son, Ltd., in the gardens of the Royal Botanic Society, has again been a great success. Visitors to see the gorgeous flowers have been numerous, and a greater amount of interest will doubtless be engendered by those shows. The certificated "Pink Pearl" seemed to attract more attention than any other individual variety.

Gardening Appointments.—Mr. Charles Abbott, late general foreman at Londesborough Park, Market Weighton, Yorkshire, has been appointed head gardener to the Right. Hon. the Earl of Carysfort, Elton Hall, near Peterborough; he entered on his duties on the 7th inst. Mr. Alfred Dryden, formerly head gardener to Mrs. Blacker, of Castle Martin, Newbridge, county Kildare, has been appointed to chief command in the gardens of Sir Gilbert King, Bart., Charlestown, Drumsna, county Leitrim. Mr. W. J. Empson, for the past thirteen years head gardener and steward to the late Mrs. Wingfield, as agent and farm steward to Frank Hargreaves, Esq., Halford Manor, Shipston-on-Stour, Warwickshire. All communications after June 23rd should be addressed to Merton Grange, Gamlingay, Cambs.

Where Our Oranges Come From.—Few people are aware that we import many millions of Oranges from foreign centres each year. The largest quantities reach our markets from Spain. The imports from this country, according to the latest Government returns, exceed 6,216,000 bushels. Spain is the greatest Orange-exporting country in the world. Italy stands second, Turkey comes next, then Portugal, and then the Azores. Egypt sends us more Oranges than France, and the United States has 22,313 bushels to her account, these fruits coming from California, and consisting of the famous seedless variety. A few Oranges come from Brazil and Germany. We get few Oranges from our colonies at present, though in future years the imports will increase considerably.

A Note on Perfumes.—The South of France and Italy supply the majority of flowers from which perfumes are extracted. English flowers, for the most part, lack the intensity of odour necessary for this purpose. Our little island is, however, unsurpassed in its production of Lavender, the moist soil being admirably adapted to its growth. The perfume of Lavender is old-fashioned, but sweet and wholesome, indeed the Queen prefers it to all others. A flower's perfume is not as a rule stored up in a gland that can be easily removed. It is, says a contemporary, a breath or exhalation that is given off while the flower lives, and ceases at its death. Perfume may be stolen from flowers in the following way:—Take two plates exactly alike in shape and size; cover the inside of them with fresh unsalted butter; strew one plate with fresh, sweet-smelling flowers, and cover it tightly with the other. At the end of twenty-four hours the butter will be fragrant with the perfume given off by the flowers.

Phylloxera in Spanish Vineyards.—The spread of the phylloxera in the sherry district of Spain appears to be a serious matter. In most of the Jerez vineyards its ravages have been of quite recent date, but they have been extraordinarily severe. For example, while in 1898 in ten different areas only forty Vines were recorded as attacked, the return of the same areas for last season stated 4000 to have been destroyed. In a well-known Jerez vineyard carrying 48,000 Vines the phylloxera made its first appearance in 1897. Until then the yield of the estate had been from 100 to 140 butts per annum; but in 1898 only fifty-six butts were made, and last season the yield sank to six butts, or one-twentieth of the normal. The only remedy found to be of the slightest avail is entire replanting with the American Vine, and grafting on to it the Sherry Grape. The process is a very expensive one, but many proprietors, seeing the excellent results obtained, have lately been induced to adopt it. In order to assist them as much as possible the Government have taken off the heavy duty on vineyards in the case of all those attacked by phylloxera, and have furthermore, says a weekly contemporary, granted ten years' freedom from taxation for all those which have been replanted with the American stocks. This wise action should enable sherry growers to tide over their difficulties. Meanwhile, it is satisfactory to learn that, though the vintage of 1899 is much reduced in quantity, it is said to be, on the whole, of fair quality.

A Novel Exhibition.—A three days' exhibition of artificial flowers is to be held at Kingston in July, under the patronage of the Mayor (Alderman Moatt). The flowers will be made and sold during the exhibition by cripple girls and members of the Watercress and Flower Girls' Mission.

New Bye-Laws of the Royal Horticultural Society.—These, amounting to ninety-six in number, have already been distributed to the members in pamphlet form. The Rev. W. Wilks, the secretary, now desires us to intimate that a special meeting will be held on Tuesday, July 3rd at 4 o'clock in the afternoon at the Drill Hall, Westminster, for the purpose of considering them.

Bradford Horticultural Society.—The schedule of the Bradford Horticultural Society, which has recently come to hand from the honorary secretary, Mr. W. D. B. Pearson, Peel Park Hotel, Bradford, embodies about nine dozen classes. Amongst these prizes are offered for all sections of the gardening community, and a really excellent exhibition should reward the committee's efforts. The show will be held in the Drill Hall, Otley Road, Bradford, on Friday and Saturday, August 24th and 25th, and full particulars may be had from Mr. Pearson, at the address given above.

The Royal Horticultural Society.—What may well be described as practical evidence of the great popularity of the Royal Horticultural Society was evidenced at the Drill Hall on Tuesday, 5th inst., by the fact that the record number of 116 new Fellows were elected. It does not look as if these were frightened because of the council's proposals with respect to the new and the old Chiswick. Last year the total number of new Fellows was 653. I should think that a considerable approximation to that number has already been made this season. This fact serves to show that the society is a strong constituency, and is far from being a close preserve.—A. D.

Royal Agricultural Benevolent Institution.—At the annual meeting of this society, which was held on Wednesday, 12th inst., Mr. W. B. Parsons presided over a good attendance. In its report the council pointed out that they had 1180 persons on the books of the society, which, with the sixty-five elected on the occasion under notice, involved the expenditure of upwards of £26,000. The income for the year ended December 31st, 1899, amounted to £21,746 3s. 8d. During the past forty years the institution has benefited 3153 persons at a cost of £415,413. The council makes a strong appeal for further support. The secretary is Mr. C. B. Shaw, 26, Charles Street, St. James'.

The Gardeners' Company.—Mr. Philip Crowley, F.L.S., Master of the Worshipful Company of Gardeners, entertained the Lord Mayor and Sheriff's and other guests at dinner on Thursday night at the Prince's Restaurant, Piccadilly. After the loyal toasts had been honoured, "The Worshipful Company of Gardeners, Root and Branch," was proposed by the Lord Mayor, and responded to by the Master, who stated that though the company had existed as a guild or mystery from very early times, and used to hold a market near St. Paul's, it was not incorporated until the reign of James I. For some time it had fallen into low estate, but had recently revived, and was now, in conjunction with the Royal Horticultural Society, doing its best to promote the art and science of the gardeners' craft. The company then adjourned to the galleries of the Royal Institute of Painters in Water Colours, where the master held a reception, which was attended by a large number of representatives of the City companies and friends of horticulture. The floral adornments were a noteworthy feature of the occasion.

Fulham's Riverside Park.—On Saturday a charming extension to the pretty Bishop's Park at Fulham was thrown open by the local vestry. Mr. Oscar Drew performed the ceremony. Upon this spot originally stood a residence known as Pryor's Bank, at one time occupied by Walsh Porter, who, it is said, on several occasions there entertained George IV. whilst Prince of Wales. On the site of the house now stands an imposing pavilion, the interior of which contains well furnished reading and refreshment rooms and offices. The grounds are artistically laid out with shrubs and flowers. Mr. Drew, in his address on Saturday, said that in a large measure the beauty and completeness of the space were due to the London County Council, who had rendered valuable assistance, financial and otherwise. He regarded the spot as a delightful one, situated as it was between the Bishop's palace and Father Thames, and considered that the commanding promenade which had been built on the river wall completed an ideal riverside park.

Protection of Wild Birds.—At the recent meeting of the British Ornithologists' Union it was unanimously agreed "that any member of the British Ornithologists' Union, directly or indirectly responsible for the destruction of nests, eggs, young or parent birds of any of the species mentioned in a schedule, should be visited with the severest censure of the Union." This is the first authoritative expression of opinion on the subject from the most eminent body of experts in Great Britain, and will be most welcome to all who have unceasingly laboured to protect our birds from extermination.

The Weather.—"A. D." describes the weather of the 1st of June as "cold, wild, wet, and wretched," how does he describe the 12th? There is between the two dates a difference in temperature of 24°, the 1st being 62°, the 12th 86° in the open. Such a range of temperature in so short an interval of time is phenomenal, especially before midsummer. While, too, in some parts reports come of flooded streets and roads on the 12th, our rainfall for the same day stands at the lowest fraction—namely, 0.01. There is reason for much thankfulness for this extreme even when one reads of such deluges, and lightning and hail damages wrought in other places. Such high day temperatures without rain have been most trying to the progress of summer bedding and other planting.—S., Wilts.

Devastation by a Hailstorm.—Birmingham and some of its suburbs were visited on the afternoon of the 12th inst. by very heavy thunderstorms, and more particularly at Knowle, a village about ten miles south of the Great Western Railway. The storm of hail was there of unprecedented volume and destructiveness, and some idea of its effect may be formed when it is stated that the roofs of several greenhouses were completely demolished, and the Potato plants and tubers in two market gardens were in some instances completely uprooted by the force of the wind, rain, and hail. Cabbages, Lettuces, Strawberries, Gooseberries, and flowers were shattered, also the Apple and other fruit trees more or less decimated of foliage and fruit, whilst in places, it will hardly be believed, that the pieces of hail lay from 12 inches to 18 inches deep.—W. G.

Daily Forecasts of Weather During Harvest.—During the harvest season the Meteorological Council will supply by telegraph daily forecasts of weather to all persons desirous of receiving them upon payment of the cost of the telegrams, 6d. daily, for the period during which the forecasts are supplied. When it is so requested the charge for portage (if any) will be arranged for by the Meteorological Office, an equivalent amount being added to the charge for the telegrams. The special harvest forecast is prepared at 3.30 P.M. each day, and is applicable to the twenty-four hours from midnight following the time of issue. Applications for these forecasts, stating the period for which they should be supplied and particulars as to the shortest telegraph address and portage, should be sent to the Secretary, Meteorological Office, 63, Victoria Street, London, S.W., from whom all particulars respecting the supply of weather information may be obtained.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
June.										
Sunday.. 10	S.S.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.
Monday.. 11	E.N.E.	74.4	61.4	80.7	48.3	—	60.2	57.2	53.5	37.5
Tuesday 12	N.W.	72.0	63.2	86.4	57.9	—	63.1	57.9	53.5	48.2
Wed'sday 13	S.S.W.	74.5	66.8	81.5	55.6	0.04	64.9	58.9	53.9	47.0
Thursday 14	S.S.E.	59.8	56.5	67.5	56.8	—	63.9	59.5	54.2	51.5
Friday.. 15	S.S.W.	62.1	55.5	65.9	46.6	0.12	61.9	59.3	54.5	36.2
Saturday 16	S.S.W.	62.7	59.8	68.5	54.3	—	62.0	59.1	54.8	53.5
		59.9	57.9	68.2	53.3	—	61.4	59.1	54.9	44.1
MEANS ..		66.5	60.2	74.1	53.3	Total 0.16	62.5	58.7	54.2	45.4

The first part of the week was remarkable for very high temperature, the highest being on Monday, the 11th inst., when the shade temperature outside the screen read 90.50°. There was a slight thunderstorm on the 12th inst., since which time the weather has been more or less dull.



The Royal Horticultural Society.

THE census of opinion proposed to be obtained from the Fellows of the society by your correspondent, "Hear Both Sides," may be useful in enabling every Fellow in the society to express his or her opinion, but 70 per cent. of them at least know absolutely nothing or care nothing about the matter under discussion. Certainly the council can furnish to every Fellow such information in print before inviting a census, as shall fully detail all the pros and cons of the subject, and especially in relation, first to the horticultural uses or value of a show or meeting hall on the one hand, and of a larger and better placed garden on the other, with full information as to site and cost.

To invite any opinion on the matter referred to would now be useless, simply from lack of information. I have great confidence in the intentions, business capacities, and horticultural earnestness of each of the members of the council. But all the same they seem now in danger of allowing a policy of drift to prevail, which may in the end result less in wrecking any one proposal than in wrecking the society. What everyone so much wishes is that the council should take the Fellows entirely and absolutely into its confidence, and that speedily.

The important matter under consideration should be settled before the holiday season commences. At present nearly all discussion is taking place in the dark. How much that fact is evidenced is shown in your last week's correspondent's reference to the annual cost of a garden at Limsfield as £3000. When he says "estimated cost," I must ask, Whose estimate? Is it that of some one who knows, or of someone who does not know? Will not the council take a very early opportunity to enlighten the Fellows as to all the facts, then some practical decision may be arrived at that should settle the matter finally?—A FELLOW.

The Small Apple Election.

I MUST say I am deeply grieved to find that the interests of science should have suffered for the sake of a penny stamp. Alas! it is worse than the old story of spoiling the ship for a halfpenny worth of tar; but I am even sorrier to learn that "A. D." should think me discourteous. I can now only apologise for my neglect, and promise that if ever in the future I do venture to ask his valued opinion upon any subject I will not omit the postage stamp. May I ask that you will kindly allow me to make an apology to the rest of my correspondents before dismissing this weighty matter?

In reply to the remainder of "A. D.'s" remarks, I must say that I rather fail to catch the point. I think that the opinion of, say, fifty selected men, who live all over the country, and who most of them get their living by selling either fruit or trees (some both), is as valuable, and possibly more valuable than the opinion of 200. Again, although I admit the power of the Press, I am not sure that a larger proportion of the persons whose opinion I invited would have given themselves the trouble to make copy for a gardening paper, than those thirty-two who kindly replied to my inquiries. I can at any rate assure your readers that the signatures appended to the answers sent in are such as would carry weight with them were they published. I may add that several of the twenty-four referred to have since written, saying that they were prevented from one cause or another from writing.

Now, Mr. "A. D.," I have at any rate set the ball rolling, and the field is open for you to enter and show how the work can be done better. I am only a beginner, and mistakes are excusable with tyros, but I hope to see you do something far superior. If you return the compliment of asking my opinion I can assure you that you shall have it if I am in the land of the living; it is not contained in the last election.

If this little election has done no other good, it may help to show that there are two sides to the question of planting all early Apples to clear off "before the Americans come in;" I know the salesmen advocate this course because they like to be "off with the old love before they are on with the new," and I also know that many growers in the south share in the opinion that to plant all early Apples pays best; but do not run away with the idea that everyone thinks so, Mr. "Gleaner," the answers of my correspondents clearly show this, and my own experience would endorse their opinion. May I say that for twenty years I managed, and sold the produce from, 100 acres of Apple orchards, so I have been through the mill, and my experience was that, taking an average of seasons, the very early and very late Apples paid best. I fear I have only replied very briefly to "Gleaner's" kindly criticisms, but I am just off for my holidays, and when I return, reinvigorated as I hope, I trust I may find that abler pens have taken this subject in hand.—A. H. PEARSON, *Lowham, Notts.*

Tropæolum speciosum.

I NOTICE on page 500 of the Journal that "Ret Rail" mentions *Tropæolum speciosum* as a South American plant. Now South America has three *Tropæolums* of its own—the tricolor, commonly called the soldier; the pale blue, the shade of a wild Violet; and a yellow something, the same, but not exactly, as *canariensis*. This "speciosum" came—I was told years ago—from the Himalayas, brought thence by a member of the Hamilton family to the Isle of Arran, where it flourished so wonderfully, receiving the moisture to which it was accustomed in its mountain home. Then it was introduced to the mainland of Scotland, and was gradually brought south. Mrs. Earle writes of it also as from South America, which I am convinced it never saw. I grow mine on a south wall, also in other aspects in Cheshire, and cannot eradicate it. I also know of gardens near where it is a weed rising in most unexpected places, but then it gets moisture at the roots. It must be shaded by "Geraniums" or anything else being planted over it, so as to keep the roots cool and moist. This is the one thing necessary, as in watering the "Geraniums" the *Tropæolums* also get watered.—MRS. H. F. F.

Are Young Potatoes Dangerous Food?

My attention was drawn to this matter recently by hearing of a gardener's family suffering serious stomacheal derangements and poisoning symptoms, with considerable irritation, that could not be attributed to any cause except from using prematurely young or "new" Potatoes. It would be of the greatest interest if you, or some of your correspondents who have fully considered the matter, would say at what stage are new Potatoes safe dinner food. I am aware the seasons affect the result. Probably all outdoor crops, including fruit, are at least a fortnight late this year. There will possibly be a 20 per cent. absence of sunshine at the end of June for that month alone, and this materially affects the ripening and maturity of early Potatoes, and hence their quality as food products. Do Potatoes and all solanaceous plants contain poisonous ingredients, and is this greater or less in their earlier stages? Do they become eliminated with age, or ripening, or in boiling or steaming? I need hardly point out of what world-wide interest this subject is, and how very deserving of serious study, more especially in a season like the present, when the Potato crop is likely to be used before being fully ripened or matured—not merely as a farm crop, but in the garden as well. In the south of Ireland this is an unusually moist and humid month of June so far.—W. J. MURPHY, *Clonmel.*

A Dearth of Peaches.

To many readers of the *Journal of Horticulture*, no doubt, such a title as that chosen by "H. D." (page 476) would scarcely be understood, at any rate among private gardeners. There are those whose business it is to dispose of surplus Peaches in the season of plenty to whom the notes in question might appear strange reading. "H. D.," however, mentions that more particularly is this dearth felt in the North and Midlands. I do not think the West of England knows of such straits in the Peach season, and prices such as are noted would be gladly welcomed. Covent Garden salesmen monopolise a considerable quantity of English-grown Peaches, and those who produce fine fruit in sufficient quantities to make a connection with a good house obtain satisfactory prices. It is the small growers who dispose of their produce locally who suffer in the prices obtained, while the market growers, from the fact of their supply being greater and longer lasting, obtain better value.

At least one, if not more, of the leading London salesmen adopt a course which is commendable, and that is to send orders to the producer for fruit to be transmitted direct to the consumer. This, when the packing can be depended on, is much more satisfactory for both, because the fruit in its direct despatch can be saved miles of railway journeying. There must, of course, be confidence assured between salesman and grower to allow of this course working satisfactorily. From outdoors in the south there will be quantities of Peaches from open walls, the prospects generally being very promising. Salesmen in the North having a difficulty in securing satisfactory supplies ought to communicate early in the season with growers in the South and West, when their troubles would probably cease.

With suitable houses and careful cultivation pot trees are no doubt, as "H. D." says, the most economical, and it is really marvellous the crop that can be obtained from them. For this phase of Peach culture there must be an adequate supply of water and labour, for they need frequent attention in bright weather. Under such conditions the earlier, as well as a portion of the main crop, can be grown in pots, but without doubt the grower whose aim is to secure fancy prices for his fruit must resort to permanently planted trees, as from these only can extra sized Peaches be gathered.

It is surprising to see how Peach crops vary in different gardens even when all receive the best attention. There is no denying that outdoor-grown Peaches possess very high quality, and in soil suited to them they are not of much trouble as regards their roots. There are

of course, obstacles that the outdoor crop meet that are practically unknown under glass. Wasps, hornets, and flies in some seasons destroy a great proportion of the crop, and they are so persistent that it is with difficulty their raids can be suppressed. Woodlice give trouble where nailing of the branches is resorted to, and the walls are perforated with holes. Then there is the danger of spring frost, which sometimes does irreparable damage. It was proved last year that the Peach flower can endure much cold, as when it appeared that flowers were ruined by sharp frosts, really good crops were produced. Fortunately the flowering season passed without any damage being inflicted this year, and no blister appeared despite the cold and trying spring.—W. S.

Notes on Melons.

IN most establishments there will be Melons in various stages, and a few remarks on them will probably be useful. Plants with the fruit ripening must have a plentiful supply of air, and water should be withheld from the fruit. If the plants are strong and there is a disposition to crack, cut the growths carrying them half through a few inches below the fruit. A dry atmosphere is essential, and a temperature of 70° to 75° artificially, falling about 5° at night. If the sun be powerful place a slight shade of some kind directly over the fruit. Water need only be given to prevent flagging, and a light protection from bright sun after a dull period is a much better way of preventing flagging than heavy waterings and a close vitiated atmosphere.

In the case of plants swelling their fruit, those recently set should have more soil added to the ridges or hillocks. Let it be warm, moderately heavy, rather moist, and press it firmly. Give a thorough watering when the fruit is the size of an egg, and follow in the course of a day or two with liquid manure, then mulch with sweetened horse droppings. Water will be required about twice a week, or only once in dull weather, but this is governed by the borders to a great extent. Remove all fruit but three or four on a plant, also blossoms, and afford the needful support. Stop or remove laterals, not allowing secondary growths to interfere with the principal leaves. Syringe twice daily—in the afternoon not later than four o'clock, having the foliage fairly dry before night, and sprinkle the floor about five or six o'clock with weak liquid manure, and give a little ventilation at the top of the house the last thing at night. This will save trouble if air is not given early in the morning. On bright mornings commence ventilating about seven o'clock, or at 75°, and increase it with the advancing sun. Close at 80° to 85°, increasing to 90°, 95°, or more. Fire heat will only be necessary on cold nights and in dull weather.

Plants setting their fruit should have the foliage disposed thinly, so that air and light may have free access. The growths will then be stout and short jointed, the foliage thick in texture, and the blossom will be proportionately strong. Ventilate constantly, and, if dull, have a little warmth in the pipes to insure a circulation of air, and when the heat falls below 65° at night or 70° to 75° in the daytime. The soil must be sufficiently moist to prevent the leaves flagging, and only moderate moisture will be required in the atmosphere. To prevent the deposition of moisture on the flowers, maintain a warm buoyant atmosphere. Fertilise the blossoms about noon on fine days, and when several are expanded on a plant, stop at one joint beyond the fruit, to ensure uniformity of swelling.

Young plants for trellises should be trained with one shoot, and laterals rubbed off up to the first wire, and then every alternate lateral on opposite sides, stopping the leading shoots when about two-thirds up the trellis. Flowers ought to show on the laterals; if they do not do so at the second joint stop at that. Plants for training over the bed should be stopped at the second leaf. Select four of the resultant shoots, training two to the back and two to the front of the frame or pit; remove all others carefully. If only two shoots result stop them at the second or third leaf, and make a selection of the best resulting growths for training. Keep the stem clear of laterals and leaves for a space of about 6 inches from the collar. Remove every alternate lateral on the shoots, stopping the leaders when from 12 to 15 inches from the sides of the frame. Let there be no deficiency of moisture at the roots, and add fresh soil to the ridges or hillocks as the roots protrude. Syringe at closing time, but avoid wetting the collar, as it may lead to canker. Provide the necessary ventilation for insuring sturdy short-jointed growth. Put out plants as pits and frames become vacant, and if a gentle warmth at the roots be afforded it will give the plants a start and be all that is necessary. Close early and keep the growth well regulated not less frequently than once a week. Shade only to prevent flagging.

A last sowing of seeds for late fruit should be made at once for planting in manure-heated pits and frames. Plants from this sowing will afford fruit at the latter part of September, and be useful if properly attended to. Growers with command of light well heated structures may continue making sowings as required until the end of July. The plants from the last-named sowing will continue the supply up to the beginning of November, after which the fruit is generally of moderate quality.—GROWER.

Wistow Hall.

SCATTERED throughout the Midlands are many ancient castles, abbeys, and mansions, around which cluster historical memories of those turbulent times when continuous internecine strife sapped the vigour of the nation, and delayed commercial expansion till juster laws and a better form of government prevailed. In Wistow Hall there is still a famous relic of those far-off days, and the mansion has the distinction of having twice sheltered a king. Charles I. slept there on the night preceding the battle of Naseby, and on resting there after the battle was compelled to beat a hasty retreat. The king's attendants in their hurry placed the wrong saddle on his charger, with the result that the saddle and trappings used by his Majesty at the famous battle are still preserved in a glass case at Wistow Hall. This relic was greatly prized by the Halford family, whose ancestors held the estate before King Charles' period, the first baronet being created by Charles I. The estate is now in the hands of Mark Firth, Esq., who, together with Mrs. Firth, take great interest in gardening, and are continually making improvements in the fine, old—but previously neglected gardens—which surround their pleasant home.

Two Horticultural Cyclists.

On a fickle April day two Leicester horticulturists resolved to leave for a time the bustle of that thriving Midland town, whence boots and hosiery find their way to every quarter of the globe. Astride those wonderful inventions of modern times the two pressed through the busy haunts of toilers into the sweet fresh country air, where verdant fields, and hedges in their pristine beauty, formed a gladsome picture of England's charms in the days of spring. "No need to hurry on such a day as this," remarked No. 2—who, to tell the truth, was not in "training"—and was therefore sometimes content to let the "leader" go, and quietly follow at a pace more suitable for thoroughly enjoying the pleasant scenes. Thus eight miles were in due time traversed, when a sharp turn in the road and a steep descent brought us to the entrance of the park. A glimpse of the white walls of the Hall are quickly seen in the distance, the tower of a pretty church appears on the opposite side, and then the gardens are reached, where we received a hearty welcome from Mr. F. J. Clark, the head gardener, whose acquaintance was previously made at one of those institutions where so many gardeners meet—viz., a Chrysanthemum show.

An Odd Corner.

On our way to the kitchen garden we passed through an enclosure of a type so often met with in old gardens, a kind of odd corner, apparently designed to show an outline as irregular as possible, neither circular, square, nor oblong, but a curious combination of arcs and angles. New walks have recently been made here, worthless plants uprooted, and good borders formed for herbaceous plants, one of them, having a west aspect, being entirely devoted to the choicer kinds of hardy Liliums. I venture to predict that this border will in its season prove a very great attraction, as Liliums certainly rank among the most beautiful and showy flowers we have. When the borders are well made, and sound bulbs obtained, they will go on for years increasing in strength, and forming fine large clumps. All gardens should have a large bed or border of Liliums.

The Vegetable Garden.

The kitchen garden is a fine one, being bounded on three sides by high walls, and on the south side by a low fence, which arrangement renders the whole space open and sunny. In this department, renovation, improvements, and thorough culture are evidently being carried out just as opportunities allow. Many old fruit trees with gnarled and cankered branches, which were only cumberers of the ground, have been uprooted, to be replaced by young ones, arranged in a regular fruit quarter, instead of on the ancient plan of dotting them like sentinels in various parts of the garden. The fame of the Wistow vegetables had already reached my ears, the Lettuces, Cauliflowers, Onions, Leeks, and Celery, each in their season having been described to me as giants among the pigmies with which they came in competition. I, therefore, naturally was on the look out for the cause of such success. It is the old story of laying a good foundation by means of that deep and thorough culture which the British gardener can never afford to neglect. By degrees, the whole of the garden is being trenched three spits deep, and manure is used with no unsparing hand. The gardener who does this fears not the drought of summer. Mr. Clark has learned gardening

in a good school, for he is an old pupil of Mr. E. Beckett of Aldenham House, and has carried into the heart of the Midlands those splendid cultural practices which have made Lord Aldenham's gardens famous in the horticultural world. In a season like the present there is not much in the way of vegetables to be seen at so early a date, but the young crops were advancing as fast as the cutting winds and frosty nights would allow them to do. New beds of Asparagus had, however, been formed, and these promised to give good results in due time.

The Vineries.

In the adjoining vineries I noticed an admirable illustration of the "old" and the "new" methods of culture at Wistow. The old Vines were struggling for existence, the wood being weak, the bunches few and puny. The next compartment, however, revealed an achievement highly satisfactory. Young Vines (principally Muscats) were planted last year, when they almost reached the top of the very long rafters,

and tender looking. Great use has to be made of pits, frames, and hotbeds for raising plants and early vegetables, and another good range of houses would be a great boon and largely increase the capacity of the gardens for fruit and vegetable production. A word must be said about the Chrysanthemums, of which Mr. Clark is a successful exhibitor. They are strong, sturdy, and in every way promising in appearance.

The Conservatory.

From the plant stove we crossed the green sward, noting by the way a walk bordered on either side by splendid Rose bushes, with rustic poles fixed at intervals for climbers; onward we passed by newly made Rhododendron beds to the large oblong shaped conservatory adjoining the mansion. This was indeed a picture of brilliant beauty, the front stage being occupied by Azaleas, Deutzias, Spiræas, double Wallflowers, Genistas, Cinerarias, and Liliums. Fine Palms formed the background, among which were interspersed grand plants of Lilium



FIG. 144.—WISTOW HALL.

the canes being exceptionally strong and short-jointed. They were shortened to almost half their length, had broken regularly, and were each carrying several fine bunches. In due time they will, I am sure, produce Grapes of the highest quality, as the rods are fully 5 feet apart, and to grow Muscats to perfection they must have plenty of space. On the back wall grand blooms of Maréchal Niel Roses were hanging on strong trees in pots, and a good crop of that fine Tomato Eclipse was advancing, on plants grown in pots under the Vines.

The Plant Houses.

I noticed examples of that attractive yellow flowered plant *Celsia cretica*; when grown under glass Mr. Clark finds it of great service for decorative purposes, though in the South of England it is quite hardy. A fine stock of bedding plants, of which large numbers are required, was coming on rapidly. In the plant stove, Palms, well coloured Crotons, and Dracænas of a useful size were evidence of cultural skill. For lack of other suitable space a few Cucumbers were also grown in this structure, and grown well, too, for the fruits were long, straight,

Harrisi, some stems carrying eight or nine flowers, the whole of the plants looking pictures of health. It seemed to me that No. 1 looked on them with envious eyes.

The Flower Garden.

The pen has run on, and there remains little space to treat of one of the great features of the place, the fine compact geometrical flower garden, situated immediately in front of the conservatory and mansion. There indeed was a blaze of colour of which we caught glimpses when on the higher ground previously traversed. Tulips, Hyacinths, Pansies, Alyssum saxatile, Wallflowers, and Daisies were the principal plants employed to create so grand a display. Yellow Tulips with a groundwork of purple Pansies, scarlet and white Tulips intermixed, red Tulips, with a groundwork of white Pansies near masses of purple Hyacinths, were some striking combinations noticed, and Wallflowers played no small share in contributing brightness to the scene as well perfuming the air. These flower beds are situated in a slight hollow, and their full beauty is best seen from some of the higher windows of

the mansion, where the eye looks down upon them, and can take in the whole at a glance. From the bright flower beds the rising ground of verdant grass leads to an irregular belt of trees in the woodland beyond, and the whole thus forms a lovely picture which lingers in the memory.

The Ancient Yews.

Still one other feature had to be noted before Wistow was left behind. We traversed a woodland walk bordered with gay Daffodils, and the sky blue *Scilla sibirica*, and pressed onward in a quiet retreat till we reached some ancient Yews, famous by reason of their gnarled and twisted trunks, which must have withstood the storms of many centuries, and, like the England in which they stand, still show no signs of senile decay. It is always a pleasure to visit an establishment when the relationship between employer and employed are of that happy description which enables the one to carry out with pleasure the wishes of the other, as at Wistow.

To Mr. and Mrs. Clark for their kind hospitality the thanks of Nos. 1 and 2 are due. We were glad to get out of Leicester during the freshness of morning, but welcomed its lights at night as wayworn travellers in a driving rain.—H. D.

The Charm of England.

LONDON at last! We get our luggage together. It is nine o'clock on Saturday night, and we wonder what we are to do with our things and where we are to go. A Queensland squatter who has been used to the back blocks, and has about 100 square miles of country on which he lives, wears an expression of hopeless perplexity, and exclaims almost tearfully, "I've been about five minutes in London, and I'm satisfied it's too big a place for me. I'm off. I'll take a cab and drive into the country." He darts toward a hackney coach, but suddenly stops, as if turned to stone, and stares intently at the cab. Then he exclaims, "Look at it! No. 17,240. Fancy, seventeen thousand cabs. Oh, why did I leave my little —" But here, says the writer in the "Daily Express," his friends arrived and took charge of him.

With Monday morning came our first good look at the city of the world. Companions for seven weeks journeying across the world, our patriotic little party had to break up. Each had to go his own way, and I was left in the town alone. Lonely. I had heard people say how lonely one could be in London. But now I know. The countless throngs of people, the endless streets, the network of traffic, the rush of business, bewilders all the faculties and makes one stand dismayed. "What am I among all these millions? Why, if I dropped dead no one would ever know anything about me." That was the feeling—a feeling that grew hour after hour as I continued to discover myself in new districts, utterly unable to realise how I got there, and only getting out of one puzzle to get into a worse one. I spent all the morning trying to find the Strand. I spent all the afternoon trying to lose it. I had made up my mind that I would find my way back without taking a cab—but I made a shameful surrender, drove home and forfeited my self-respect. Through the night the spectre of the City was upon me. Bewildering crowds passed before my heated brain, and I tried to solve impossible problems. If there are six million people in this City, and they take on the average twenty steps a minute, how many footsteps have fallen in London to-day? How many pulse-beats have there been in London to-day? Alternately I tried to realise the greatness of London and to forget it. I could do neither. A fear—an unreasoning fear, but a great fear—fell upon me.

With the first streak of dawn I arose, gathered up my belongings, and fled. I told the cabman to drive to the railway station. "What railway station?" he asked. "Any one," said I. He drove me to some station. A train was going somewhere. I think it was in the direction of the Isle of Wight. I bought a ticket and got in. Presently we sped away, past the Thames Embankment, past Westminster, away from the nightmare of streets, and shops, and houses, and 'buses, and endless throngs in which was not one face I knew. At the village of H—I left the train. There are green fields here, and running streams, and flowers, and singing birds, and giant trees, and gentle breezes whispering through their branches. It is springtime, and the merry month of May, and the blossom is on the tree, and the glory of God is upon the land. I wander down leafy laues and lie by the babbling brook, and the air is sweet to breathe, and the peace of the great All-Father is in my heart.

Ah! this is England; this is the Motherland which, enshrined in song and story, has struck her roots deep in the hearts of millions in distant lands who, though of English blood, have never seen England. Not London, whose greatness drives away the novice in an unknown terror, but countryside and river, and lake and village, and wood that take the wanderer to their hearts, and seem to whisper, "Rest; here is peace." This is the England I came to see; the England that has

made the breed of men who overrun the world. Twenty miles away is London—vast, inconceivable. They say that there men win world-wide fame, imperial power, fabulous wealth. It may be so. Here peace comes to us, and—hear that blackbird singing.

Hardy Azaleas.

THE value of *Rhododendrons* is familiar to all, but it seems that the merits of hardy Azaleas are not fully recognised by those engaged in the formation or planting of new gardens. They yield their flowers in the greatest profusion, the colours are most varied and rich, and a large proportion of the varieties possess a peculiarly powerful yet agreeable fragrance. Many of those that flower before the leaves are fully out become masses of the richest yellow, orange, red, and rose-shaded flowers, the brilliant effect of which can scarcely be realised by those who have not seen a number of plants together.

Somewhat sheltered positions suit these Azaleas best, chiefly because their flowers are soon damaged by wind in exposed places. Similarly they do not thrive in very dry soil, for most of them are derived from the swamp-frequenting North American species, and even those that are not found in such wet localities are chiefly confined to woods where they enjoy considerable moisture and protection. The soil must be well drained, and though a compost of peat and loam is generally employed the former is not essential, as tufty loam not too heavy with a good proportion of leaf soil will make excellent beds for them. The hardy Azaleas cultivated in English gardens have originated from the Mediterranean *A. pontica*, the North American *Azaleas calendulacea*, *nudiflora*, *viscosa*, *occidentalis* and *speciosa*, and the Chinese or Japanese *Azaleas sinensis* or *mollis*. These have been much intercrossed, and the respective types are now connected by so many intermediate forms that it is not easy to classify them under their respective species. In the older forms the parentage can be more readily detected.

All these species are extremely variable, frequently sporting, and by natural cross-fertilisation they had yielded a number of varieties before they were taken in hand by hybridisers here. They were first popularly known as American Azaleas, and subsequently, after they had received much attention in Belgium, and the number of forms had been artificially increased very largely, they became known as Ghent Azaleas, while now the progeny of *A. mollis* are commonly termed Japanese Azaleas, and a collective term for them is hardy hybrid Azaleas. The European *A. pontica*, which is found in Turkey and the Levant, is a deciduous shrub with ovate ciliate leaves and yellow open shallow corollas, not unlike *Rhododendron ponticum*, but readily distinguished by the characters named. It does not appear to have been introduced to England as early as some of the American species, but it has produced a number of varieties ranging in colour from pure white to dark coppery orange, and it has been useful in crossing with the other species.

Of the American Azaleas, one of the first brought to this country was *A. nudiflora*, which, according to the elder Aiton, was introduced by Mr. Peter Collinson in 1734, and before the close of the century several varieties of it had been added to collections. The flowers vary in tint from white to blush, pink, rose, red, and scarlet; they are tubular in shape, and suggestive both in form and fragrance of the Honeysuckle, under which name, with the prefix Wild or Upright, it is known in the United States. It is frequent in swampy districts in several States, and Gray remarks that the varieties are numberless. This is a charming type, owing to the rich colours prevailing in the flowers, their powerful fragrance, and the freedom with which they are produced before the leaves are fully expanded. It is also known as the May-flower in America, in allusion to the time at which it blooms. Several scores of varieties have received botanical names and been admitted into authoritative works, and the characters of the respective species are well preserved throughout. As the White Honeysuckle, another American species, *Azalea viscosa*, is familiarly known in its native home, where it is chiefly found in swamps near the coast in the northern and eastern States. This materially differs from the preceding (introduced at the same time) in producing its flowers when the leaves are fully expanded; and though the plant is beautiful, it does not present such a mass of colouring as *A. nudiflora*. The shades, too, have not so wide a range, being confined to white or yellow with rosy tinge, but the flowers are borne in large trusses, and are very fragrant.

The flame-coloured Azalea, *A. calendulacea*, is of a similar habit to *A. nudiflora*, but has larger, more open flowers, and of yellow, orange, or reddish hues. It is a native of woods and mountains in Pennsylvania, and from it has been obtained a large number of handsome varieties. *A. speciosa* and *A. occidentalis*, allied species, have also been concerned in the production of hardy varieties, but the foregoing are the principal types. With regard to *Azalea mollis*, many very handsome forms have been raised from it during the past twenty years, surpassing all the others in the size of the flowers and trusses, but wanting fragrance, and the colours only consist of shades of yellow, orange, or reddish orange. They are, however, extremely handsome, very early, and especially useful on this account for forcing, as though hardy they are sometimes damaged by our late spring frosts.—C.



Tomato Culture.—Frequently Tomato plants are severely thinned of leaves and branches, in order, it is said, to let in the sun to ripen the fruit. But ripening, says Mr. Meehan, is an important process. Good healthy leaves and foliage are essential to this, and the fruit will ripen better under the shade of such foliage than when exposed to the sun without the leaves. Where the branches are so numerous it is of advantage to thin out weaker ones to give more strength to the rest.

Varying Colours on Laburnums.—I was asked recently to account for the different coloured bunches of "Golden Chain" blooms on the trees varying, as they do, from a beautiful bright yellow through shades to a lilac colour, even on the same boughs. On examination with my magnifying glass I proved to my own satisfaction that it is caused by insects or mites, which restrict the sap and growth. It, however, seems very singular that they should change the colours to such an extent.—J. HAM.

Pæonia lutea.—To the many gorgeous flowered plants included in the "tree section" of the genus *Pæonia* has now to be added a plant having beautiful golden yellow flowers, which is now flowering at Kew for the first time, from a small piece received two years ago from the Paris Botanic Garden. In habit it closely resembles *P. Moutan*, but appears more slender in growth. What the size of the flowers will be as the plant gets larger and stronger is doubtful. At present the only flower open is 3 inches across, with ten petals of good substance. The petals and stamens are of the same golden colour, but at the base of the stamens a reddish brown mark is to be seen. This species resembling *P. Moutan* so closely ought to be valuable to the hybridist; if the colour of this could be got into the larger flowers of the other a very handsome plant would be the result. Like many other novelties of recent years it is a native of Yunnan.—W. D.

Preventing the Onion Maggot.—Professor J. B. Smith, of New Jersey, U.S.A., gives two methods of treating Onion beds to keep away or kill the Onion maggot. For small patches in the garden he would take fine sand and moisten it with kerosene, and sow it along both sides of the row, near but not touching the plants. This not only drives away the fly which lays the egg, but kills many of the maggots, as they leave one plant to go to another, as they will when the first is dead. The fly looks like a small house fly. A cupful of kerosene to a pailful of sand is enough. For larger fields, says the "American Cultivator," he would make a furrow alongside of the rows, turning the soil away from the plants, using a hoe or hand plough for that purpose, then sow broadcast about 600 lbs. of kainit and 200 lbs. of nitrate of soda to the acre, after which level the ground again. The first rain will carry the fertiliser to the plants, killing many of the maggots, and increasing the crop.

'Midst Fields and Hedges.—It is to be hoped that every one of my readers will be able to gratify the roaming instinct which makes most of us pine for "fresh fields and pastures new" in leafy June. Lovely Sussex should not be overlooked during the wanderings to all lovers of soft, undulating, downs, sleepy, unheard of villages, winding streams, and meadows richly jewelled with sweet Flora's choicest gifts. Every hedge is crowned with fragrant Hawthorn, beneath which nestles the creamy "Milkmaid's" starry blooms, pink "Ragged Robin," nodding Bluebells, wild Hyacinth, and azure-eyed "Speedwell." Fern, Milkwort, and waving Grasses are in profusion. Along the banks of the winding Ouse, the Arun, and the Adur are meadows deep and sweet-smelling, while small boats and punts float sleepily along the swift streams. Here and there the square wooden tower of an old-world Sussex church rises picturesquely against the velvety softness of a green-clad hill. To all this may be added, says a writer in "Reynolds," the pure wholesome air, the blue smoke of wood fires rising from the thatched roof of an oak and plaster built cottage, the hum of bees, the song of the lark and wildly whistling thrush, swallows, white breasted and blue winged, dart over the water from overhanging trees. Everywhere is peace and health, and the joy of life, which comes at times to even the saddest, weariest, loneliest among us. Do not forget that "God made the country and man made the town." Seek in Nature's own heart your pleasures, your rest, and recreation.

Pine Apples from Jamaica.—Highly satisfactory prices were obtained at the sale in Covent Garden Market on Friday of the first direct shipment of Pine Apples from Jamaica. The fruits sold for from 1s. 6d. to 2s. 6d. each. Some of the St. Michael Pines were larger, and consequently made more money. As the latter often makes from 3s. to 8s. each, the new industry is likely to prove of great benefit to the colony.

Practical Forestry.—One of the arguments against forest planting is, that one has to wait so long for returns. "Meehan's Monthly" has, however, always contended that companies could be formed and land planted, the stock of which company would be of increased market value from year to year as the trees reached a commercial age. The value of a plantation of this kind has been well shown by the sale of a ranch in California. Part of the property was unplanted; this brought 50 dols. an acre. Sixteen acres were in Alfalfa, the Lucerne of other regions; this brought 200 dols. an acre. A plot of 110 acres in hardshell Walnuts sold for 350 dols. an acre, and 80½ acres of softshell Walnuts for 400 dols. an acre. There is little doubt that forest planting, intelligently pursued, could be made profitable, forest fires being the only uncertain element in the operation.

Injury from Red Spider.—The red spider flourishes nearly as well in the open air in many parts of America as it does in greenhouses. It is an especial lover of the Spruce family. The past season they were so abundant in many parts, that when noticed the trees had the appearance of having been scorched by fire. This insect can, says a transatlantic journal, be very easily kept in check by spraying with kerosene emulsion, and if they can be kept clear from young trees, they are seldom troublesome to larger ones. When suffered to remain undisturbed from year to year they increase rapidly, and this seems to be the trouble now. The fact is, that spraying with kerosene emulsion has got to be a part of garden work, to be as regularly attended to as hoeing or pruning. Every garden should have its emulsion sprayer, and the trees should be carefully watched for the appearance of insects just as the regular garden crop is watched for the appearance of weeds. It is very little trouble to spray hundreds of trees in a short time with a good sprayer; and, generally speaking, when the insect is kept down in the younger trees it is not troublesome afterwards.

Hidalgoa Wercklei.—Under the name of *Childsia Wercklei*, this new species of *Hidalgoa* was distributed by an American firm in 1899. A popular description, and one that will convey the best idea of the plant, is to say that it is a climbing Dahlia. It is a native of Costa Rica, and makes a mass of long, slender, succulent branches, which are aided in attaining a height of at least 15 feet by means of the twisted leafstalks. The leaves are numerous, 2 to 3 inches long, and finely divided. The heads of flowers are similar to those of a single Dahlia, 2½ inches across. The ray florets are scarlet on the inside, orange scarlet on the reverse, the centre being composed of a tuft of bright yellow florets. It succeeds well in a cool airy greenhouse, grown on a pillar, rafter, or balloon, and is at home in a compost consisting of two parts loam, one part leaf mould, and one part decayed manure, with a little sand. Cuttings root readily if placed in a little bottom heat, and large plants can be had in a few months. As it is easily propagated and easily managed, being at the same time a brilliant coloured and free flowering plant, it ought to become popular as it gets better known.—R. G. K.

Hawthorn Enemies.—There are some curious facts to be noted with respect to the insect devastators of the Hawthorn, of whom there are at least two dozen species belonging to the lepidoptera alone. The caterpillars of the black veined white butterfly and of the little ermine moth do great havoc on the foliage, but, perhaps, the most remarkable of the larvæ which feed upon the leaves of the Hawthorn is that of the brimstone moth, which is often present, though seldom seen. Nothing more perfect than its knack of concealment is to be found among the many devices of the insect world. This cunning caterpillar simulates a twig of Hawthorn, bent into a curve like that of a twig, wearing a humpy excrescence resembling the projection of a twig, assimilating itself in colour, greenish or brownish, as may happen to be the hue of the twigs among which it places itself, erecting itself like a twig with the help of a cord so fine as to be almost undiscernible. Sometimes a shock is given to sensitive nerves by the discovery that a seeming twig feels soft to the touch and begins to wriggle. It is worth notice that the cocoon of this insect is similar in colour to its surroundings, dark or light, as they may happen to be.—("Globe.")

Fremontia californica.

Two of the most conspicuous of the flowering shrubs flowering in the Himalayan house at Kew at the present time both hail from California. One is the attractive *Carpenteria californica* with large pure white flowers, and the other is *Fremontia californica*, the flowers and leaves of which are represented in the illustration (fig. 145). This *Fremontia* came to us with the reputation of being quite hardy, but such has not proved to be the case, though we believe it will thrive fairly well on a wall in a favourable climate. This is the more regrettable, as the splendid pure yellow flowers are different from those of any other shrub that is grown in our gardens.

Writing of the *Carpenteria* and the *Fremontia* in the *Journal of Horticulture* a year or two back, "W. D." says, "Although not cultivated to any great extent, the two plants, *Fremontia californica* and *Carpenteria californica*, are known by repute to most horticulturists as showy flowering shrubs. Like many other good things from the same country, they are not sufficiently hardy to withstand without injury, in the open, any but the very mildest of winters as far north as London, and even with the protection of a wall they are generally killed by a spell of severe frost. In the S.W. counties, however, and in some parts of Ireland they do well, especially if a snug corner can be given them. At Kew a good sized plant of each has been included among the occupants of the new Himalayan house, and in that place both are now in flower. *Fremontia californica* is represented by a specimen 6 feet high. It is of pyramidal habit, the branches being thrown out at right angles with the stem. The flowers are borne singly from last year's wood; they are deep, rich yellow, and $3\frac{1}{2}$ inches across. The leaves are more or less cordate, rather deeply lobed, and very hairy on the under surface. The example of *Carpenteria* is about $4\frac{1}{2}$ feet high by $3\frac{1}{2}$ feet through, and is thickly covered with upright racemes of pure white flowers. Of the two plants this is certainly the more useful, and is worth growing either as a pot or border plant for a cold greenhouse. If grown in a pot, it will be greatly benefited by being plunged outside for the summer."

The Vine as an Ornamental Plant.

MR. A. F. BARRON'S excellent work, "Vines and Vine Culture,"* has reached its fourth edition. It remains substantially the same as before, but with certain additions. The most noteworthy is a short illustrated chapter on the "Vine as an Ornamental Plant." This it undoubtedly is as represented by certain species and varieties. We are reminded of the fact that "years ago in the Royal Horticultural Society's Gardens at Chiswick, and also at South Kensington, Vines were trained to tall columns and festooned from pillar to pillar, presenting a very handsome appearance;" and the author of the book goes on to say he "has often wondered when looking at these noble plants why the Vine was not more generally grown in this way, and that its beauty should be so little known."

Mr. Barron also reminds us of another fact, for fact it is, that the Vine is an excellent town plant, "growing luxuriantly in some of the foulest parts of London." Now that pergolas appear to be coming into fashion it is almost a wonder they are not to be seen in appropriate positions in the London parks and gardens. Arcades of Vines over sections of some of the walks would not only form a distinct and attractive feature, but afford grateful shade for visitors during those burning hot days in summer, when it is the greatest relief that can be found. Both in many public and private gardens trees appear to have been planted as far from the main paths as possible. Arcades of Vines here and there over such paths would be entirely inviting, whereas at present we have veritable sun traps, rendering the promenades more punishing than restful with a sun temperature of 120° to 130° .

With a strong framework of oak or larch, and this not trimly covered, but freely and informally draped, with Vines, rambling Roses, Honeysuckles, Jasmines, and other appropriate plants, a feature of interest would be added to both public parks and private pleasure grounds where provision for summer shade is lacking. In city and town gardens Roses may not thrive, but there are few in which Vines and the wilder Clematises, such as the "Travellers' Joy," and the common Virginia Creeper, will not flourish, and with these aids cool retreats might be formed that would be greatly enjoyed.

But Vines, as Mr. Barron suggests, are the best, and the best of these for luxuriance and beauty are the American and Japanese species, though some European varieties are effective. Of these latter he

mentions Miller's Burgundy, Espiran, and the purple-leaved Spanish Tenturier. The brilliant Japanese species, *Vitis Coignetiae*, has, as it deserves, prominent attention for ornamental purposes, and a good word is said for the rich-leaved American *V. Labrusca* or *Thunbergi*. Others are also recommended, and it may be noticed that Mr. Barron gives to the familiar close-growing wall plant, known as *Ampelopsis Veitchi*, its modern and presumably proper name of *Vitis inconstans*.

As to the bulk of "Vines and Vine Culture" devoted to the growing of Grapes and descriptions of varieties, nothing more need be said than that it is the standard work on the subject, and will carry its respected author's name to posterity. The possession of this soundly practical work should be regarded as a necessary part of the equipment of all who desire to excel in the management of Vines and the production of superior Grapes.

Mr. Robert Fenn on Potato Hybridising.

IT was in 1837 I planted my first orchard—grubbed up a lot of worn-out Apple trees and renovated their sites, 3 yards in diameter and 2 feet deep, with chopped turves taken from a meadow, and mixed with ditch scourings and road dirt (exactly what the poor old Chiswick garden wants doing to now). As the spring time waned this ground, about an acre, became trenched and planted with the then most popular sorts of Potatoes, for the purpose of making selections for improvements from the most promising stools. I lost a good ten years over that futility.

I have often longed for a rich firm to back me up in my experimental Potato work. An old song makes "Robin Rough" sing "If I had but a thousand a year, Gaffer Grey." Alas! neither by wishing nor singing, neither one nor the other of those helps will ever come to my share. I did rub my eyes, though, when a few weeks ago I read in a contemporary, "Fenn of Sulhamstead has ceased to intercross or otherwise raise new varieties." "Fenn of Sulhamstead" answers Yes and No; Yes in regard to my first response, No means I have merely jumped from South to North America, and for the last two decades have been endeavouring to cross-fertilise our domestic varieties with wild species from the latitudes of New and Old Mexico.

I have succeeded in regard to New Mexico through *Solanum Fendleri*, and as regards Old Mexico thus far with *S. castanum*, by securing last season a pollen-cross from the latter with one of my seedling varieties. I feel certain I shall produce for posterity efficient food to be handed down, should Providence insure me life, and I can maintain the opportunity. I put a stress on the word, for continuity in this Potato-breeding business means deep delvings into the pocket of the inventor. Please, however, to let it be known to my old friends and readers of "our Journal," that instead of having gone under, at present it looks very much like my being on the surface. But I can find no more satisfactory occupation in producing by intercrossings other than what I have acceded to from South American sorts with our domesticated varieties, unless, peradventure, it would be in the creation of size. You know how my experience for a very long time has been set against the pot-wallopers. I am now busy in planting my selections, which I shall hope to name Her Majesty Queen Victoria Jubilee Potatoes.—ROBT. FENN.

[A later note] I feel disappointed to-day at not seeing in print the paper I sent to the Editor some time ago upon the above subject. I suppose it must be because you have so many brilliant writers now on more brilliant subjects that you cannot entertain "Joseph." I will try and not take it too much to heart. Should you, however, bring yourselves to consider what I wrote last, about my progress with the noble tuber, of sufficient calibre, I send now a tag to add as to what happened at Cottage Farm on the 24th ultimo.

That being Ascension Day, of course as an orthodox churchwarden I attended at the ordinances of our Church. On my walk home, amongst others in conversation, I invited two congenial young Irishmen who were of the congregation to join me at a function I was going to hold in my greenhouse, an achievement not possible, at the date, to be attested in any other part of the world, in commemoration of her Majesty Queen Victoria's birthday. "Potatoes; O-h-h!" [Well, I told you all about them in my last important (*sic*) unpublished composition]. Note, I had been successful after a three years' tussle in hybridising the last wild trans-comer from North America, *Solanum castanum*, with an English seedling of my own raising. This function was the sowing of the seed which my audience, the missus included, now witnessed. When completed, there arose in my mind to quote, "Paul planted, Apollos watered, but God alone giveth the increase." Then after presenting each of my audience with a Rose for their buttonholes, we retired into my cottage, and—my daughter Alice being from home—one of the bhoys from Ould Ireland presiding at the piano, we rendered "God Save our Gracious Queen" vociferously.—ROBT. FENN.

* 12, Mitre Court Chambers, Fleet Street, E.C. 5s., by post 5s. 6d.

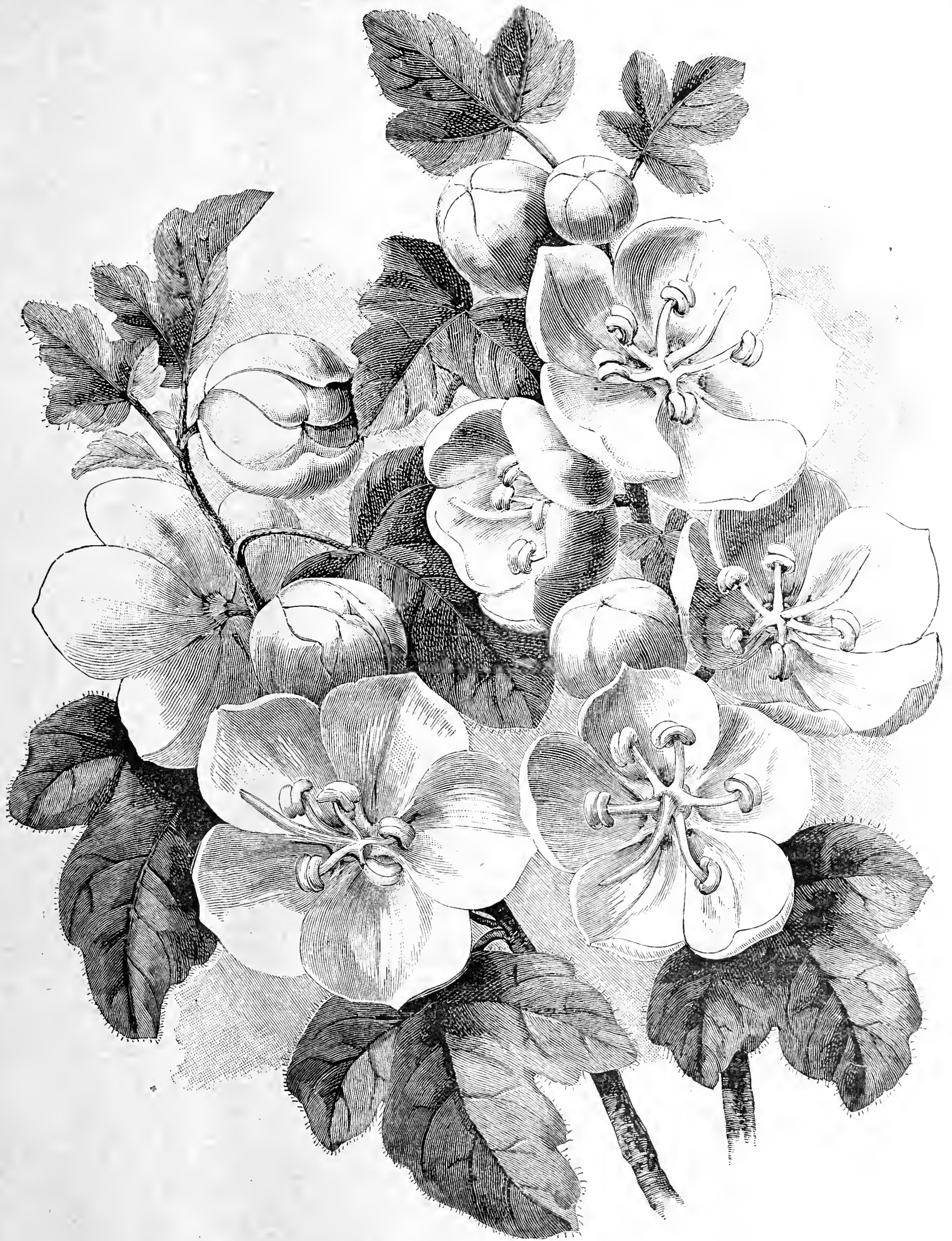


Fig. 145.—FREMONTIA CALIFORNICA.

Onions from Bermuda.

WE have received through Messrs. Northard & Lowe, Tooley Street, S.E., a sample of Onions from Mr. G. A. Bishop, superintendent of the Government Botanic Station and Public Garden, Bermuda, who "would like to see a note respecting them in the dear old Journal." We understand this is a portion of the first consignment to this country, sent with the object of establishing a market for the produce in Britain during March, April, and May. At present Egyptian Onions largely hold the field for general household purposes. They are firm, conical Onions, varying in size from 1 to 2 or 3 inches in diameter, of a dull straw colour, and sell for 7s. or 8s. a bag of about 100 lbs.

The Bermuda Onions are entirely different. The bulbs are perfectly flat, and resemble the original type of the white Spanish, now not often seen. They vary in size from a little under 2 inches to a little over 3 inches in diameter, the larger being about 1½ inch thick at the margin, and very little more at the centre. They are greenish yellow in colour, very firm, with thin transparent skins the bulbs perfectly ripened, and bright in appearance. Some of them when roasted were found unusually tender, mild, and sweet, and the cook praised them highly, as not affecting the eyes in peeling. Whether the cost of production and transit will prejudice the Onions of our ancient colony (annexed in 1609) as against the "Egyptians" we do not know, but we are strongly of opinion that it would be hard to find better samples in appearance, quality, and the varied sizes requisite for general household use, than those which have been sent by Mr. Bishop from one of the main islands of the Bermudas group in the West Atlantic, nearly 600 miles from North Carolina. These islands are said to be a favourite winter resort of Americans; chief products, vegetables; climate, temperate and equable; mean temperature (1896) 69·7; rainfall (same year) 59·38. There is no note on the soil in our reference, but it can clearly be made to grow superior culinary Onions, though they are the reverse in character of the Brobdignagian bulbs as produced by our great growers for exhibition.

The Royal Horticultural Society.

Drill Hall, June 19th.

THE exhibition in the Drill Hall on Tuesday was a most excellent one, and was admirably representative of the plants now in flower. Fruits were not numerous, but some splendid Melons and Peaches were exhibited. Orchids were seen in both quantity and quality, as were exhibits for the special inspection of the Floral Committee.

Fruit Committee.

Present: G. Bunyard, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. J. H. Veitch, H. Esling, A. F. Barron, W. Pope, G. Kelf, A. Dean, S. Mortimer, W. Bates, W. Farr, G. T. Miles, G. Wythes, F. Q. Lane, H. Markham, E. Beckett, G. Norman, and J. Willard.

Mr. H. Walters, gardener to Lord Gerard, Eastwell Park, Ashford, contributed an excellent collection of Melons, including the leading varieties. Mr. H. Folkes, gardener to C. E. Strachan, Esq., Gaddesden Park, Hemel Hempstead, sent Peaches Dr. Hogg and Royal George, with Melons Hero of Lockinge, Taunton Hero, and Eureka. Mr. W. Fyfe, gardener to Lord Wantage, V.C., Lockinge Park, Wantage, arranged a splendid collection of fruit. Amongst others we noted well finished Grapes Madresfield Court and Foster's Seedling, Nectarine Impératrice, Peach Stirling Castle, Figs Brown Turkey and White Ischia, and Melon British Queen. The fruits were set off with Iris flowers.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); with Messrs. J. Walker, S. M. de Graaff, H. B. May, C. Jeffries, R. Dean, G. Renthe, J. W. Barr, W. Howe, J. Fraser, J. Hudson, J. Jennings, H. S. Leonard, C. E. Pearson, J. D. Pawle, J. T. Bennett Poë, C. E. Shéa, G. Gordon, H. J. Jones, H. J. Cutbush, W. J. James, G. Paul, E. T. Cook, C. Blick, and E. Mawley.

Mr. Chas. Blick, gardener to Martin R. Smith, Esq., Hayes, Kent, arranged a large semi-circular group of Carnations in grand style. The blooms were simply immense, and the "grass" clearly indicated the splendid condition of the plants. The new yellow variety Cecilia could only be described as magnificent, while Mrs. Martin Smith, Calypso, Grace, King Oscar, Florizel, Lady Rose, and Mrs. Trelawny were also remarkable for their beauty. The Palms forming the back, and the Maidenhair and Caladium argyrites in the front, made an excellent finish to the group. Messrs. Barr & Sons, Covent Garden, arranged a table of hardy flowers in which Pæonies and Irises formed the principal features, while a general collection of cut flowers made up a good display. The Spanish Irises included fine bunches of Thunderbolt, Blue Beauty, California, a grand yellow; Cantab, and Snowball. The most conspicuous Pæonies were Sir Henry Irving, a pretty rose; humca carnea, flesh pink; delicatissima, creamy white; Boccage, rosy red; and Duke of Wellington, a good white. Iceland Poppies, Calichorti, Lupinus arboreus luteus, and Pyrethrums were all worthy of commendation.

Hardy flowers were again well staged by Messrs. T. S. Ware Ltd., Feltham. There were German Irises, *Armeria cephalotis rubra*, *Cypripedium spectabile*, *Scabiosa caucasica*, *Aster alpinus*, a few *Liliums*, which included *L. elegans maculatum aureum*, *L. elegans robustum*, *L. colchicum*, and *L. pomponium*, while a collection of rock plants completed the display. A tasteful group of Carnations arranged with Palms, variegated Acers, Ferns, Crotons, Dracænas, and other foliage plants was displayed by Messrs. B. S. Williams & Son, Upper Holloway. The best Carnations were Alice Avres, Rose Celestial, R. H. Measures, and Tom Sayers in the border section, while the Malmaison type was represented by Sir Evelyn Wood, Blush White, Princess of Wales, and the Churchwarden. Messrs. Jas. Veitch & Sons, Ltd., Chelsea, put up a splendid bank of Spanish Irises, *Ranunculus*, and *Ixias*, which were arranged in a bank of Maidenhair Fern, and produced a capital effect. The most noteworthy varieties were Darling, Leander, Blanchard, Agnes, Belle Chinoise, Formosa, and Mia. A good display of mixed English varieties was also staged, and the *Ranunculuses* formed an attractive feature.

Messrs. F. Cant & Co., Colchester, had a fine display of garden and other Roses arranged in vases, which formed a perfect Rose garden in itself. A few of the best varieties were Paul's Single White, Papillon, Reine Olga de Wurtemberg, Princess de Sagan, fimbriata, W. A. Richardson in capital form, Paul's Carmine Pillar, Marquis of Salisbury, Gustave Regis, and Alister Stella Gray. From Messrs. Paul & Son, Cheshunt, came a large collection of garden Roses, in about 110 varieties; a most interesting display. The new garden Rose Una, a creamy semi-double variety, shading to apricot in the centre, was conspicuous; as were The Lion, a seedling from Carmine Pillar; Aglaia, L'Ideale, Blairi No. 2, Gustave Regis, Morletti, Mignonette, Mrs. Bosanquet, Rugosa alba, microphylla, Fimbriata, and Carmine Pillar. Hybrid Aquiegias were staged in grand condition by Messrs. H. Cannell and Sons, Swanley. The strain is undoubtedly a good one, and as staged left little to be desired, the colours being most varied, while the huge bunches displayed them admirably.

Messrs. W. Paul & Son, Waltham Cross, staged a miscellaneous collection of plants and cut flowers. The back was formed of specimen plants of *Bougainvillea Sanderiana* in full flower, *Nicotiana colossea foliis variegatis*, a gigantic Tobacco plant; while the baskets of Roses arranged with Ferns made a pleasing group. The Roses included baskets of Madame Hardy, Adele Prevost, Spong, Blanchfleur, and Gloire des Polyantha. From Messrs. Kelway & Son, Langport, came a grand display of Pæonies, Delphiniums, and Gaillardias. The Pæonies were arranged in huge clusters, and the following were most conspicuous—Duchess of Somerset, Joan Seaton, Dr. Bonavia, Maria Kelway, Lady Romilly, Mrs. George Lewis, Red Ensign, and Sir George White. The Delphiniums formed an attractive feature, and contributed well to the exhibit. A most interesting exhibit was that arranged by Messrs. Wallace & Co., Colchester, the Irises, *Liliums*, *Calochorti*, and Pæonies being particularly attractive, while good bunches of *Incarvillea Delavayi*, *Brodiaea ixiodes*, and a few bearded Irises materially assisted the display.

Messrs. Geo. Cooling & Sons, Bath, arranged a fine exhibit of garden Roses, staged in their well known style. The bunches were huge, though lightly arranged. The varieties included rugosa fimbriata, Dr. Rouges, Papillon, Queen Mab, Harrisoni, Heb's Lip, Perle d'Or, Camoens, Blanche de Coubert, and Marquis of Salisbury, among many other well known varieties. Mr. G. Prince, Oxford, arranged a large exhibit of Tea Roses in boxes, staged in the orthodox style, also in pyramid form, together with a splendid collection of Sweet Peas arranged with Asparagus. The Roses included fine specimens of Muriel Grahame, Maréchal Niel, Comtesse de Nadaillac, Princess Beatrice, Maman Cochet, Cleopatra, Mons. Furtado, and Catherine Mermet. The Sweet Peas were in the pink of condition, and included such varieties as Triumph, Countess of Radnor, America, Salopian, Firefly, and Ovid. Mr. Amos Perry, Winchmore Hill, staged a large collection of hardy flowers in bunches, forming an attractive exhibit; notable were *Dictamnus fraxinella*, *Campanula speciosa*, *Heuchera sanguinea*, double Rockets, Irises in variety, also Papavers, and *Lychnis viscaria splendens plena*. Many others might be mentioned, but space forbids.

From Mr. M. Prichard, Christchurch, Hants, also came a collection of hardy flowers, arranged in large bunches which looked imposing and attractive. Some of the chief were *Dianthus Napoleon III.*, *Orchis foliosa*, *Potentilla Congo*, a dark crimson variety; *Delphinium formosum*, Piuks in variety, and a collection of Spanish Irises. Mr. J. Fitt, gardener to F. W. Campion, Esq., Trumpet's Hill, had a good collection of garden Roses, and although they were staged in a bad light it had the advantage of preserving the flowers, which kept fresh and bright throughout the day. The bunches of Rêve d'Or, W. A. Richardson, Carmine Pillar, and Marquis of Salisbury were capital. A large group of Pæonies and Irises was arranged by Messrs. Jas. Veitch & Sons, Ltd., Chelsea. The Pæonies were simply gorgeous, while the Irises included Arnolds, Nationale, Louise Mayer, Mrs. H. Darwin, Garrick, Topaz, and Bridesmaid. The same firm also sent greenhouse *Rhododendrons* and *Kalanchoe flammea*.

Mr. John Fleming, gardener to Lady Pigott, Wexham Park, Slough, occupied a large space at the side of the hall with a charming decorative exhibit beautifully arranged, while the material employed was of first-rate quality. Tall Humeas and Palms formed a light

and graceful top, while the groundwork contained Carnations, *Lilium Harrisii*, Statice, and Zonal Pelargoniums, with Crotons, Caladiums, Ferns in variety, small Palms and Dracænas, a pretty edging of *Isolepis gracilis*, completed a magnificent group. A pretty group of Roses called *Electra* raised from *Rosa multiflora simplex* and W. A. Richardson was much admired from Messrs. Jas. Veitch & Sons, Ltd., Chelsea. The colour is lemon yellow, a little deeper shade to the centre giving it a good appearance. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, arranged a group of Sweet Peas grown in pots, with a few good single and double Begonias, Spiræas, and Celosias, also a pair of well-flowered plants of Malmaison Carnation H. J. Jones, a deep crimson. The Sweet Peas included Gorgeous, Emily Eckford, Queen Victoria, Modesty, Apple Blossom, Countess of Aberdeen, and Mars. The whole were well arranged with Maidenhair Ferns. Messrs. V. N. Gauntlett & Co., Japanese Nurseries, Redruth, staged a collection of Rhododendrons and a few choice flowering shrubs, such as *Orsothamnus thrysoides*, *Kalmia latifolia*, *Escallonia exoniensis*, and *Eurybia macrodonta*, also a collection of Bamboos ranging from 6 to 20 feet long; an interesting exhibit.

Mr. Anthony Waterer, Knapp Hill Nursery, Woking, sent four boxes of Rhododendrons and Acacias in four varieties. Mr. Walters, gardener to Lord Gerard, Eastwell Park, Ashford, staged boxes of cut Roses in good condition, also some bunches of garden Roses. The new Carnation Lady Gerard was also again on view. Mr. B. R. Cant, Colchester, sent a pretty display of garden Roses, well arranged and in capital condition. The chief varieties were Ma Capucine, Bardou Job, Madame P. Perny, Gustave Regis, Rainbow, and Madame Falcot.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, de Barri Crawshaw, H. Ballantine, H. Little, J. T. Gabriel, F. J. Thorne, H. J. Chapman, W. H. Young, W. H. White, J. Douglas, T. W. Bond, J. Jaques, H. A. Tracey, H. T. Pitt, T. Rochford, W. Cobb, J. Colman, J. G. Fowler, E. Hill, and A. Truffaut.

Mr. G. E. Dav, gardener to H. F. Simonds, Esq., Beckenham, arranged a bright group of Orchids, in which forms of *Lælia purpurata*, *Odontoglossum vexillarium*, *Cattleyas* and *Oncidium concolor* were most conspicuous. Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, contributed a small collection of Orchids, comprising *Odontoglossums*, *Dendrobiums*, *Cattleyas*, *Lælias* and others. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, staged *Odontoglossum crispum* in splendid form, with *Sobralia Veitchii*, *Lælio-Cattleyas Arnoldiana* and *Canhamiana*, Edouard André, *Lælia tenebrosa* Walton Grange variety (fig. 146), *Cattleya Mossiae* Lawrenceæ, *Polystachya zambesica*, *Pogonia* species, *Epidendrum fragrans*, and others.

Mr. A. Ward, gardener to F. A. Bevan, Esq., Trent Park, New Barnet, showed a superb specimen of *Cœlogyne Dayana*; it carried an immense number of magnificently flowered spikes. Messrs. H. Low and Co., Bush Hill Park, made a brightly attractive display with *Cattleyas*, *Lælias*, and *Odontoglossums*; the flowers were of good form and well coloured. A small group was arranged by Messrs. B. S. Williams and Son, Upper Holloway. It included *Vanda suavis*, *Cattleya Mendeli*, *Vanda teres*, *Odontoglossum citrosum*, *Lælia tenebrosa*, and a charming collection of *Cypripediums*. Messrs. Stanley Ashton & Co., Southgate, showed *Cattleyas*, *Odontoglossums*, *Cypripediums*, *Miltonias*, and other Orchids in variety.

A few superb Orchids were staged by Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham. They included *Lælio-Cattleya eximia*, L.-C. Lady Wigan, L.-C. Hippolyta, *Cattleya Mossiae*, In Memoriam Richard Curnow, *Cypripedium callosum* Sanderæ, C. Curtisi, *Odontoglossum crispum* Rex and one or two others. Mr. Davis, gardener to J. Gurney Fowler, Esq., Woodford, sent some magnificent *Cattleyas* with *Cypripedium callosum* Sanderæ, *Cochlidoda Noezliana*, and a few other Orchids. Mr. W. P. Bound, gardener to J. Colman, Esq., Reigate, arranged a small group in which forms of *Odontoglossum crispum* were most noticeable. Mons. F. Claes, Brussels, showed some finely grown *Odontoglossum crispum*. Exhibitors of one or two plants of Orchids were not very numerous. They included Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, *Odontoglossum crispum* The Earl, and O. Rolfeæ Walton Grange variety; Mr. W. H. Young, Orchid grower to Sir Fred. Wigan, Bart., East Sheen, *Phalaenopsis grandiflora* (superb white form), *P. speciosa* and *Sobralia Veitchii aurea*; Messrs. Charlesworth & Co., Bradford, *Cypri-*

pedium Chapmanii heatonense and *Dendrobium Phalaenopsis Schröderianum album*; Mr. J. May, gardener to J. B. Joel, Esq., Northaw House, *Cattleya gigas imperialis*; Mr. J. Douglas, Great Bookham, *Dendrobium tortile*; and Mr. J. T. Barker, gardener to W. P. Burkinshaw, Esq., Hessele, *Cattleya Mendeli Mandiæ*.

Medals.

Fruit Committee.—Silver-gilt Knightian medal to Mr. W. Fyfe, silver Banksian medal to Mr. H. Folkes, and silver Knightian medal to Mr. H. Walters. Orchid Committee.—Silver Flora medals to Messrs. B. S. Williams & Son, W. H. White, G. Day, J. Davis, and H. Ballantine; and silver Banksian medals to Messrs. Stanley, Ashton and Co., W. P. Bound, F. W. Thurgood, F. Claes, and H. Low & Co. Floral Committee.—Silver-gilt Flora medals to Messrs. G. Prince, W. Blick, J. Fleming; silver Flora medals to Messrs. H. J. Jones, J. Veitch & Sons, W. Paul & Son, F. Cant & Co., F. W. Campion, and Cooling & Son; silver-gilt Banksian medals to Messrs. Kelway & Son and A. Perry; silver Banksian medals to Messrs. R. Wallace & Co., Barr & Sons, B. R. Cant, H. Cannell & Sons, M. Prichard, Paul & Son, and T. S. Ware; and bronze Banksian medal to A. Walters, R. Gauntlett & Co. and A. Waterer.

Certificates and Awards of Merit.

Auchusa italica grandiflora (Mrs. Bulteel).—An improved form of

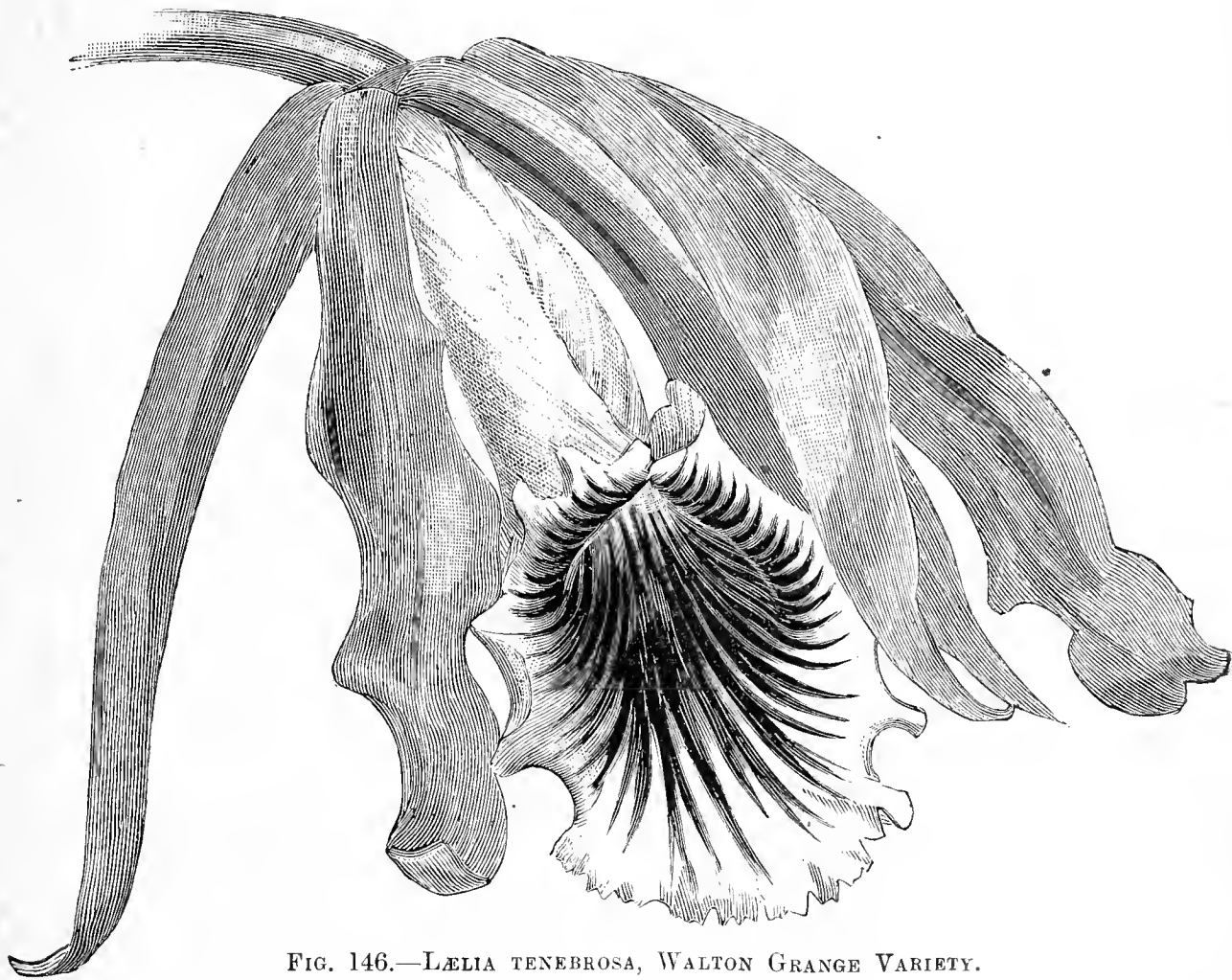


FIG. 146.—*LÆLIA TENEBROSA*, WALTON GRANGE VARIETY.

an old-fashioned plant that is too well known to require description (award of merit).

Campanula persicifolia Moerheini (T. S. Ware).—A semi-double form of the well known double pure white Peach-leaved Campanula (award of merit).

Delphinium Queen of Huish (Kelway & Son).—A very bright blue variety with large flowers (award of merit).

Eremurus Warti (T. S. Ware).—This is said to be a new species from central Asia; the spike is about 4 feet long, and is clothed with yellow flowers (award of merit).

Geranium sanguineum album (A. Perry).—A white form of a well known plant (award of merit).

Heuchera micrantha rosea (R. Wallace & Co.).—A very floriferous form of the type; the flowers are much deeper pink in colour (award of merit).

Iris germanica Black Prince (A. Perry).—A handsome variety of the germanica section; the standards are purple and the falls dark purple (award of merit).

Iris paradoxa (Van Tubergen).—A most beautiful Iris. The standards are white with blue veins; the falls, covered with short hairs, are velvety blackish purple (first-class certificate).

Iris urmiense (Van Tubergen).—A pale yellow species of the *Oncocyclus* section (award of merit).

Pæony Eastern Queen (R. Wallace & Co.).—A magnificent variety with intense crimson single flowers (award of merit).

Sobralia Veitchii aurea (W. H. Young).—A superb yellow variety of this well-known *Sobralia* (award of merit).

The York Floral Fête.

June 13th, 14th, and 15th.

On Wednesday June 13th the York Floral Fête was held for the forty-second time, and, as usual, a brilliant display was brought together. The majority of the classes were well filled, but as is customary in a gathering of such magnitude as this, the competition was not very keen in some instances. The reputation the Yorkshire exhibitors have made for themselves with Pelargoniums was well maintained on the present occasion, while fruit was admirably staged for such an early date in a late season. Orchids were particularly attractive, as were groups and specimen plants, though some confusion was observable in the arrangement of the latter. The trade, as usual, contributed handsomely to the general display.

For a group of plants arranged for effect, occupying a space not exceeding 300 square feet, the first prize went to Mr. W. Townsend, gardener to E. Beckett Faber, Esq., Belvedere, Harrogate, who effected a very meritorious arrangement. A fine *Kentia Fosteriana* stood in the centre of the background, and the front of the group had as a centre a cork grotto from which spikes of *Odontoglossum crispum* issued, two other mounds being crowned with fine *Cocos Weddelliana*. The undulating surface was relieved by single-stemmed *Crotons*, *Lilium Harrisii* and *Dracaena Sanderiana*. *Caladium argyrites*, *Pancratium fragrans*, and *Eulalia japonica variegata* were skilfully employed. The second prize was awarded to Mr. W. Vause, Leamington, who had larger Palms in the background. *Phoenix rupicola* stood on a central mound towards the front of the group, and was flanked by low rustic arches. This group had more variety than the first, but was a little crowded. The third prize was secured by Mr. W. Curtis, gardener to Jas. Blacker, Esq., Thorp Villa, Selby.

In the classes for twelve, six, and three, stove and greenhouse plants in bloom, Mr. Cypher, Cheltenham, was first, and Mr. Vause, Leamington, second in each instance; Mr. C. Lawton, gardener to Col. Harrison, Broadley, Welton House, Brough, being third in the class for twelve. For a single specimen stove plant in bloom, Mr. Vause went to the front, and was followed by Mr. Cypher and Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington. For a single specimen greenhouse plant in bloom, Mr. Vause again received the premier prize. Mr. Cypher regained the chief position with six ornamental foliage plants, Mr. C. Lawton being first for three. In the class for three *Crotons*, Messrs. R. Simpson & Son, Selby, were first, and Mr. J. McIntyre second. Mr. Cypher came first with a single specimen Cape Heath with *Erica depressa*, and Mr. Vause second. For six exotic Ferns Mr. J. McIntyre took first prize with handsome plants of *Davallia Mooreana*, *D. bullata*, *D. fijiensis*, *Gleichenia rupestris*, *Microlepia hirta cristata*, and *Adiantum concinnum*. The second position was adjudged to Messrs. R. Simpson & Son, and the third to Mr. J. Snowden, gardener to the Rev. G. Yeats, Heworth Vicarage, York. Mr. J. McIntyre retained the lead with three exotic Ferns, Mr. J. Snowden being second, and Mr. J. Eastwood, gardener to Mrs. Tetley, Fox Hill, Weetwood, Leeds, third. For a group of Carnations in bloom, not less than fifty pots, arranged amongst Ferns, the first prize was awarded to Mr. J. P. Leadbetter, gardener to Arthur Wilson, Esq., Tranby Croft, Hull, who staged in his customary excellent style. The *Malmaisons* were large and full, and the foliage healthy. Tree Carnations Duke of York and Germania were conspicuous. Mr. J. W. Hutchinson, Kirby Moorside, secured the principal prize for a collection of Roses in pots grouped for effect. Messrs. Jackson & Son, Bedale, were second, and Mr. H. Pybus, Monkton Moor, Leeds, third.

For a table of Orchids, 12 feet by 5 feet, good arrangement to be the test, the first prize went to Mr. Cypher. This table had at the back two arches composed of *Asparagus plumosus* set with spikes and single blooms of various *Cattleyas*, *Lælia purpurata*, and *Dendrobium Dalhousianum*. The Orchids in pots sprang from a groundwork of Ferns, and amongst the various plants were *Cattleya Mossiæ*, *C. Mendeli*, *Lælia tenebrosa*, *Epidendrum vitellinum majus*, *Oncidium concolor*, *Miltonia vexillaria*, and *Thunias*. Mr. John Robson, Altrincham, was second. Mr. Cypher was again first for ten Orchids in bloom, with *Cymbidium Lowianum*, *Lælio-Cattleya* (seedling), *Thunia Marshalliana superba*, *L. purpurata alba*, *Cypripedium Lawrenceanum*, *Miltonia vexillaria*, *Odontoglossum crispum*, and *Cattleya Mossiæ splendens*. Mr. J. T. Barker, gardener to W. P. Burkinshaw, Esq., West Hill, Hessle, was a creditable second. The last named grower showed six excellent Orchids in bloom, and secured the first prize. *Sobralia macrantha* in splendid form gained the premier prize in the class for a single specimen Orchid for Mr. C. Lawton.

Mr. Skill, gardener to Mrs. Lloyd, Lingcroft, York, headed the class for a group of herbaceous *Calceolarias* arranged for effect. For a hand basket of cut flowers the first prize was justly awarded to Messrs. Perkins & Son, Coventry. It was a most charming arrangement of *Oncidiums*, *Odontoglossums*, *Cattleyas*, and *Dendrobiums*, with *Asparagus plumosus*. Mr. Jas. Summers, Fawcett Street, Sunderland, was second with a basket that was a trifle crowded, Roses being intermixed with Orchids. Mr. Vause came third. For two bridal bouquets Messrs. Perkins & Sons distanced everybody with an inimitable arrangement. The second prizewinner, Mr. J. Summers, also staged admirably, Mr. Geo. Webster, New Market, Sunderland, being third.

Precisely the same order was maintained in the classes for two ball and two hand bouquets, the exhibits being again of exceptional merit. For a single bouquet Messrs. Perkins & Sons were first, and Mr. Webster second.

Messrs. Harkness & Sons, Bedale, secured the premier award in the class for seventy-two Rose blooms, in not less than thirty-six varieties; Messrs. J. & A. May, Hope Nurseries, Bedale, being second, and first for forty-eight, and also for thirty-six distinct varieties of cut Roses. For twenty-four distinct varieties Messrs. Harkness & Sons were first; while for eighteen distinct varieties Mr. J. W. Hutchinson, Kirby Moorside, was the most successful exhibitor. Messrs. Burrell & Co., Cambridge, were second; and Messrs. Harkness & Sons third. For a stand of twelve white and yellow Roses, in six distinct varieties, Messrs. Harkness & Sons were first, and Mr. J. Hutchinson second.

In the class for twelve bunches of stove and greenhouse cut flowers Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hall, Guisboro', was first; Mr. Alderman, gardener to J. D. Ellis, Esq., Sparken House, Worksop, second; and Mr. Keywood, gardener to W. H. Battie Wrightson, Esq., third. For a stand of flowers suitable for a dinner table Mr. Geo. Webster was first, and Mr. G. Cottam, Alma Gardens, Cottingham, was the best exhibitor of twelve bunches of hardy border flowers.

The first prize for a collection of hardy cut flowers, in a space not exceeding 18 feet by 6 feet, went to Messrs. R. Smith & Son, Worcester, who had a very exhaustive display, including everything at present in flower. The second prize was awarded to Messrs. Harkness & Son, Bedale.

Mr. McIndoe annexed the premier award for a decorative table of fruit not less than ten dishes. The exhibit was composed of Pine Charlotte Rothschild, Grapes two bunches each of Black Hamburg and Foster's Seedling; Peaches Grosse Mignonne and Early Alfred; Nectarines Lord Napier and Stanwick Elruge; Figs Brown Turkey, Plums Early Transparent Gage and Purple Imperial; Cherries Bigarreau Napoleon, and Downton; Melons Hutton Hall and Best of All, and a dish of Strawberries. This exhibit received 127 points out of a possible 136, and was awarded twenty-four points—the maximum—for decorative effect. Mr. J. Tullett, gardener to Lord Barnard, Raby Castle, secured the second prize with a magnificent dish of Fig Brown Turkey, and two grand dishes of Strawberries as the best features. The exhibit received 102 points, twenty of which were for decorative qualities. For a collection of six kinds of fruit, Mr. J. McIndoe was again first with three bunches each of Grapes Black Hamburg and Chasselas Napoleon; Peach Grosse Mignonne; Nectarine Lord Napier; Fig Brown Turkey and Melon Hutton Hall green flesh. Mr. J. Easter, gardener to Lord St. Oswald, Nostell Priory, Wakefield, who staged Grapes Black Hamburg and Foster Seedling; Peach Rivers' Early York; Nectarine Rivers' York; Fig Brown Turkey, and a seedling Melon, was awarded second, and Mr. Tullett third. For a small collection of four kinds of fruit Mr. J. McIndoe maintained the lead, and was followed by Messrs. J. F. Leadbetter and J. Easter in the order given.

Mr. Jordan, gardener to J. Corbett, Esq., Impney, Droitwich, was first for one Pine. For three bunches of black Grapes Mr. Oates, gardener to Lady Hawke, Wighill Park, Tadcaster, was first with perfectly finished Black Hamburg; Mr. W. Nichols, gardener to Viscountess Beaumont, Carlton Towers, Pontefract, being second; and Mr. W. Allsop, gardener to the Right Hon. F. J. Saville-Foljambe, Osberton, Worksop, third. For three bunches white Grapes Mr. W. Nichols was first with Buckland Sweetwater, fine in bunch and berry. Mr. J. McIndoe had to be content in the second place with Foster's Seedling. Mr. C. Lawton went to the front in the class for six Peaches, showing Grosse Mignonne, looking perfectly ripe. Mr. Williams, gardener to Earl Feversham, Duncombe Park, Helmsley, was second with Hales' Early; and Mr. W. Allsop third. For six Nectarines Mr. J. McIndoe was first with Lord Napier; Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, second; and Mr. J. P. Leadbetter third. For one scarlet fleshed Melon the first prize was not awarded; Mr. Jordan taking the second; and Mr. Keywood, gardener to W. H. Battie Wrightson, Esq., Casworth Park, Doncaster, the third. For a green fleshed Melon Mr. Jordan was first, and Mr. C. Lawton second. Mr. J. H. Goodacre won for a white fleshed Melon, Mr. J. McIndoe being second, and Mr. Keywood third. In the class for a dish of Cherries Messrs. J. McIndoe and Williams received the awards in the order named. For a dish of Strawberries Mr. Alderman was first; Mr. W. Chuck, gardener to H. Thelluson, Esq., Brodsworth Hall, Doncaster, second; both showing admirably. For twelve Tomatoes Mr. J. McIndoe was first, Mr. Keywood second, and Mr. W. Allsop third.

Several nurserymen added greatly to the interest of the show. Messrs. James Veitch & Sons, Ltd., Chelsea, arranged a grand display of Orchids, including *Lælio-Cattleyas* *Aphrodite alba*, *Canhamiana*, *Daphne superba*, *Wellesiana albidiana*, and *Hippolyta*, and *Lælia Digbyana*. Messrs. Charlesworth & Co., Bradford, had a fine group, in which were observed *Lælia cinna-brosa*, *Odontoglossum crispum magnificum*, *Cattleya Mossiæ Wagneri*, *Oncidium concolor*, *Cattleya Warneri*, *Oncidium crispum grandiflorum*, *Lælia purpurata Williamsi*, *Cattleya Mossiæ Reineckiana*, and *Lælio-Cattleya Lady Wigan*. Messrs. Laxton Bros., Bedford, had baskets of new Strawberries, Climax,

Fillbasket, and Mentmore. Messrs. R. Smith & Son, Worcester, contributed a group of miscellaneous plants, amongst which were some Clematis on balloon trellises, including Mrs. James Bateman, Beauty of Worcester, and Enchantress. Messrs. W. Cutbush & Son arranged a fine group with a background of Crimson Rambler Roses and Hydrangea paniculata grandiflora; the Malmaisons included Lady Ulrica, Thora, Lord Welby, Mrs. Trelawyn, Baldwin, Jane Seymour, and The Shah. Lady Ulrica is a splendid deep flesh pink. Cecelia, the Yellow Tree, and Duke of York were also fine. Messrs. Kelway & Son, Langport, had a group of Pæonies, including the Queen, Lady Curzon, and Portia. Pyrethrums and Delphiniums added to the display made by the Somerset firm. Messrs. Webb & Sons, Wordsley, Stourbridge, had a stand of tuberous-rooted Begonias and Gloxinias, with the new Pea Pioneer on a wire trellis. Messrs. Dicksons', Ltd., Chester, had a really fine display of English and Spanish Irises in great variety, with Heuchera sanguinea, Allium roseum, Aster alpinus roseus, Centaurea montana rubra, Campanula glomerata, Hesperis matronalis, fl.-pl., and the Ixiolirion tataricum, Achillea mongolica, and many beautiful Pyrethrums. Messrs. H. Low & Co., Bush Hill Park, contributed Orchids in their customary excellent style.—F. STREET.



Hardy Fruit Garden.

Summer Pruning.—The summer pinching or pruning of fruit trees is only carried out on trained wall trees, and those in the open restricted to a certain shape. If some means were not adopted to maintain them in the forms intended, and at the same time cause them to produce fruit, they would quickly go their own way, and then being cut back to the shapes desired would develop more and stronger growths, usually resulting in fruitlessness. By summer pinching the energies of the trees are concentrated in feeding a few buds instead of being wasted on a number of extension growths, which would eventually be removed.

Summer pruning may commence when the lower leaves of the young shoots are attaining their full size; the foliage is then able to do its full share of important work. Superfluous energy is worked off by the shortened shoots pushing their upper buds into growth, and these may be pinched to one leaf as made. As a rule summer pruning does not all require to be done at once, but is best carried out gradually. Commence with the vigorous parts of a tree, these usually being situated near the top. The weakest shoots are at the bottom, and they will take no harm if allowed to grow and strengthen a short time longer. The work may extend over a period of two or three weeks.

Gooseberries and Currants.—These ought first to have attention. Gooseberries trained in cordon form to walls, fences and wires, and not those in bush form, require the most attention. Red and White Currants, in whatever shape they are grown, need systematic summer pruning. The main branches are always cordons, and the summer growths, without exception, are closely spurred-in in winter. Summer pruning is very essential to make Red and White Currants profitable, as a thicket of shoots is in most cases made, and these must be shortened, so as to admit light and air—not only for developing the buds, but to assist the ripening and improve the flavour of the fruit. The bulk of the bunches are borne on the spurs, from among which the summer shoots spring. Gooseberries grow similarly. Shorten both these and Currants to three pairs of leaves. Remove altogether any weak or unnecessary shoots, and take out suckers and growths springing from the ground, and which tend to crowd bush Currants, unless they have clean stems a foot from the ground.

Apricots.—The shoots of Apricots that may be pinched and encouraged to form spurs are those for which no room can be found when laying in a stock of young summer shoots. Apricots bear as well on the latter as on spurs. The most convenient shoots for laying-in start from the side of the secondary branches. These, however, if not wanted are unsuitable to shorten for forming spurs. In that case entirely remove them. The foreright shoots, or those that grow straight out from the wall, are best for the latter purpose, but unsuitable to lay-in. With plenty of young wood spurs are not essential, hence avoid originating them to crowd the trees unnecessarily.

Plums and Cherries.—Plums and Sweet Cherries on walls, or grown in pyramidal or bush form, must have the summer shoots pinched to three or four leaves. In old trees vacancies may occur which require to be filled. In order to do this lay-in young shoots, giving them plenty of space. These will bear the second year. It is not desirable, as a rule, to crowd the trees with young wood.

Morello Cherries are treated differently, the method adopted with Apricots being suitable for them, though young shoots may be more freely laid in. Only a limited number of shoots should be shortened for spurs, and these ought to be well situated.

Apples and Pears.—These may be pruned the last, but in the majority of cases spread the operation over two or three weeks. The upper shoots of the trees grow strongly, while the lower are weakly. Very late summer pruning, or not pruning at all until winter, weakens all the lower spurs considerably, hence the importance of stopping strong shoots early wherever they are situated. In addition to this summer stopping barren or attenuated spurs can be removed from trees it is desired to improve, and some efforts made to reduce crowded shoots, especially in the centres of pyramids and bushes.

Strawberries.—*Watering and Feeding.*—Copious waterings as well as mulching are needed in light dry soils to bring the crop to maturity. Plenty of liquid manure may also be given during the time the berries are swelling, discontinuing when ripe. The drainings from stables and farmyards constitute the best food which can be applied.

Netting and Protecting Ripe Fruit.—As soon as the berries commence to colour birds find out the fruits and soon spoil the choicest. Fish netting should, therefore, be laid over the beds as a protection. Heavy trusses of fruit ought to be supported by forked sticks or some contrivance to raise them above the ground, especially if the surface of the mulching is not clean and dry.

Layering.—Where Strawberries are grown in pots for forcing it is an advantage to root some runners early. The plantlets with roots just showing may be secured on the surface of the soil filled firmly into 3-inch pots. Secure them in position with a hooked peg or a stone, partly plunge the pots in the soil, and keep regularly watered until established and then cut the runner wires.

Fruit Forcing.

Peaches and Nectarines.—*Early House.*—The fruit will shortly be all gathered, therefore admit all the air possible by day and by night. If the roof-lights of the earliest house are movable, take them off after the trees have had full ventilation for a fortnight, and keep the foliage free from insects by forcible syringings. If there be any red spider use a solution of softsoap 2 ozs. to a gallon of water; if scale be present employ paraffin oil, adding a wineglassful to 4 gallons of water, with which has been added 1 oz. of washing soda and 4 ozs. of softsoap. The soda and soap should be thoroughly dissolved in a quart of water by boiling, and the paraffin added whilst boiling hot, but removed from the fire, stirring briskly till amalgamated, then add the remainder of the water hot, and apply at a temperature of 130° to 135° with a fine rose syringe, or preferably a sprayer.

Keep the borders well watered, affording liquid manure to weakly trees, which helps them to plump the buds, and mulch with short manure. Cut away the wood that has borne fruit to the shoot at the base intended to bear fruit next season, unless the shoot is required for extension. If there be a superfluity of growths, remove them now; they only keep air and light from the principal foliage and hinder cleansing operations. Keep laterals and any good shoots closely stopped.

Houses with Fruit Ripening.—The trees must not be syringed, but moderate moisture should be maintained until the fruit is ripe. Water must also be given liberally at the roots. Admit air abundantly. In gathering Peaches great care is necessary, as the least pressure makes a mark and spoils their appearance. A piece of wadding should be held in the hand, and the fruit removed, then laid gently in a padded basket or tray. A cool and airy fruit room is the best place to keep Peaches and Nectarines in after they are gathered.

Trees Swelling their Crops.—When the stoning is over the trees will endure strong heat without fear of the fruit falling. Afford tepid liquid manure to the roots of trees carrying full crops, and otherwise not too vigorous. Be careful in giving liquid manure to very vigorous trees, as it tends to over-luxuriance, and may interfere with setting and stoning in the succeeding year. Still, liberal treatment is necessary, such as light surface mulchings and copious waterings every week or ten days in well drained borders. Syringe twice a day to keep down red spider; ventilate early, keep the temperature at 70° to 75° through the day, 80° to 85° with sun heat, and close sufficiently early to increase it to 90°. This, with abundance of moisture in the house, will insure large fruit, and if ventilation is given before nightfall and increased early in the morning all will be well; but if a close and moist atmosphere be maintained with high temperature, the fruit, though large, will lack flavour.

Keep the fruit with the apex to the light, laths across the trellis will admit of this being done, and clear away the leaves from the fruit, but do not remove them if it can be avoided. When approaching ripening cease syringing, admit air freely, and 60° to 65° at night will be a sufficiently high temperature or artificially in the daytime, unless it is wished to accelerate the ripening, when it should range from 70° to 75°, with a rise of 10° from sun heat.

Fruit Stoning.—Maintain a steady temperature of 60° to 65° at night, and 5° to 10° rise by day, with the usual advance of 5° to 10° or even 15° at closing time from sun heat. Avoid a close atmosphere, and maintain a uniform temperature, and as equable a condition of moisture as practicable. Sudden fluctuations of temperature and cold draughts are pernicious, and equally disastrous is insufficient water at the roots. Allow a moderate extension of growth during this trying time, and do not permit a great percentage of fruit to stone that must be removed afterwards, but remove it in good time. A superfluity of fruit at stoning prejudices the crop, and even if stoning takes place the fruit rarely finishes well, but is small and flavourless, and a partial failure another year may be anticipated. Stop gross shoots or remove them altogether, so as to maintain an equal diffusion of growth throughout each individual tree.

Late Houses.—Train the growths thinly, reserving a shoot at the base of the current bearing wood, and stop those on a level with or above the fruit at two or three leaves, and succeeding growths at a joint or two. Side shoots on extensions not required to form bearing shoots or for furnishing the trees stop at an inch or two of growth to form spurs, and by adding to the foliage will much encourage root action and benefit the fruit; besides, these spurs usually set fruit and swell it, when those on stronger growths do not. Thin the fruit to a few more than will be required for the crop, retaining the largest and best placed. There should not be more than one fruit to each square foot of trellis covered by the trees, but a few more may be left to meet casualties in stoning. Syringe twice daily on dull days. During the prevalence of dull weather an occasional syringing will be all that is necessary, as it does not answer to keep moisture hanging on the foliage—indeed, the leaves should be dry, or nearly so, before dark. Water inside borders fortnightly, and afford liquid manure to weakly trees. Mulch the borders lightly with short manure, and keep it moist; mulching dry ground is very little use.

THE BEE-KEEPER.

Supering.

No delay must take place in the supering of all stocks from which a surplus is to be obtained. The present season has shown the advantage of timely attention during the early spring months by encouraging the queen to continue breeding. The weather on the whole has been favourable, a couple of excessively hot days caused several swarms to come off. The casts or second swarms usually come about ten days after the swarm. They should be carefully attended to, as, being headed by young queens, they will make excellent stocks for another season. The bees should be encouraged to work in the supers by placing a section containing honey therein. Some fully drawn out combs will also assist them.

It is not necessary to allow the swarms to have access to the full number of frames in the brood chamber. Unless the swarms are early they will not fill a large hive with brood in time to be of use for the white clover. When bees are within reach of the Heather late in the season their treatment will be quite different. If the swarms are allowed not more than six frames in the brood nest, the division board is placed close up to them, and if the weather is favourable, the bees invariably take possession of a crate of sections provided. After the honey harvest is over the full number of frames is placed in the body of the hive.

Rearing Queens.

If the doubling system is practised for obtaining a surplus of run honey, there will be some stocks which are not up to their full strength. These are now utilised for queen rearing. Unless there is some system in maintaining a supply of young queens in the apiary success is not likely to follow. The old queens will succumb when they are most required; the plan we adopt and recommend has always proved successful. We usually select a strong colony from which to obtain our young queens. We first remove the existing queen, and notch in zigzag form the lower edge of a comb containing eggs laid during the past twenty-four hours. The same effect may be caused by boring holes through the combs. At each place the bees will start queen cells. If a sufficient number is not obtained, insert a frame of newly laid eggs from another colony, and more queen cells will be formed.

In this manner as many queens as may be required in the apiary will be obtained, and whilst they are maturing the weakened colonies will be increasing in strength, as the queens need not be removed till the last moment, when the queen cell may be introduced into each colony, as will be explained in future notes.—AN ENGLISH BEE-KEEPER.



TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor. Letters of inquiry must be accompanied by the names and addresses of the writers, but these will neither be published nor disclosed when initials or *noms de plume* are given for the purpose of replies.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and it is convenient when each question is written on a separate sheet. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Spots on Grapes (E. T.).—The spots on the Grapes appear to be modified forms of scald. The cells immediately beneath and surrounding the damaged part of the berry are quite sound and not permeated by the mycelia of any fungus, but there is evidence of mycelial ramifications in the discoloured parts. The chief thing is to attend to the ventilation and admit a little air constantly. It is not likely to be caused by anything wrong at the roots, as that would affect all the Vines similarly, but is clearly due to some external cause, and appears to be from some direct injury, such as careless handling in trimming the Vines or in thinning the berries. It may also be due to moisture resting on the berries, and the atmosphere being heated by the sun before air was admitted.

Pears and Pear Leaves Diseased (W. R. O.).—The blackness on the three Pears is caused by the scab fungus (*Fusicladium dendriticum*, var. *pyri*). The preventive is to spray the trees thoroughly with dilute Bordeaux mixture just before the leaf buds open, repeating the application just before the blossoms open, for the third time after blossoms have fallen, and again ten days afterwards. The three Pears are eaten by some caterpillar, probably that of the winter moth (*Cheimatobia brumata*). For this pest add 1 oz. of Paris green paste to every 20 gallons of the dilute Bordeaux mixture, which will serve for all caterpillars and also those of the Codlin moth. The blistering on the leaves is caused by the Pear-leaf gall mite (*Phytoptus pyri*) which causes the leaves to become brown or black, greatly impeding the elaborating of the juices and weakening the trees. The best preventive is to spray the trees with petroleum emulsion, diluted with seven parts of hot water, when the trees are dormant, or just at the time they commence swelling the buds. The treatment must be thorough, choosing a dry time for the operation.

Tomatoes with Waxy Patches (Cross).—Various reasons have been assigned for the waxiness that occurs in Tomatoes and many other fruits. In effect it is a running together of the cells in certain parts of the fruit, and these portions became practically sealed against change in ripening. An analysis of the wax-like part differs little from the normal flesh in albuminoid and mineral substances, hence the analyses afford no clue to the cause. Still the wax-like portions contain much more cellulose, pectose, and sugar than the parts which remain normal in colour, but are deficient in malic acid, and this is very suggestive, especially in connection with your statement that bonemeal has been supplied liberally. This would favour the formation of the cellulose, pectose, and sugar; and possibly the practical closing of the cells may be due to a deficiency of potash. We have no recollection of advising you to supply bonemeal at planting, to dress with sulphate of iron as a remedy, or to apply lime this year, or to use liquid manure. Not any of these would, in our opinion, affect the fruit in the slightest degree, though the tendency to waxiness may be aggravated, as before stated, by the dressing of bone dust, and also of lime. We regard it as to some degree constitutional, and due quite as much to climatic conditions as to soil components. We cannot undertake analyses. Perhaps some of our readers may be able to throw light upon the subject, for we are convinced that only growers, by a mutual exchange of views and practices, can satisfactorily grapple with and overcome the defect which is greatly on the increase in this fruit.

Dipladenias not Flowering (Tyro).—The shoots of the Dipladenias should be trained close beneath the roof of your warmer house; in fact, they should do in either temperature, if fully exposed to the sun. If you do this, and give a good circulation of air daily during bright warm weather, we do not doubt that your plants will flower well. They do not flower satisfactorily if grown in shade and a close, confined atmosphere. Dipladenias require very careful watering, and although they can be well grown in pots, they do much better if convenience exists for planting them out.

Rust on Peaches (C. G. M.).—The fruits are "rusted" in places, also cracked in the oldest affected parts, and in others covered with the dense felt-like coat of *Sphaerotheca pannosa*, a mildew of frequent occurrence in this form on the Peach. The discoloured blotches are probably caused by wet lodging on the fruit. The affected fruits will crack more or less as they increase in size, and the best plan would be to remove and burn them. The disease, however, may be arrested by rubbing flowers of sulphur gently on the affected fruits, but it will not restore the epidermal tissues, and the fruits will be so cracked or furrowed as to be worthless for table.

Polypodiums from Spores (W. B. S.).—Polypodiums are readily raised from spores ("seed"). Take an ordinary flower pot or seed pan; drain well, and fill to within 2 inches of the rim with broken pots (corks). Put in 1½ inch thickness of soil, composed of peat and yellow loam in equal parts, with a third of corks broken small and a fourth of sharp sand. The rougher portion of the compost should be placed over the corks, and the finest at the top, which must be even and fine, the soil being pressed down firmly. Water thoroughly two or three times, and after the last watering scatter the spores—the powder-like dust on the under side of the fronds—on the surface. Cover the pot or pan with a pane of glass, resting it on the pot, leaving a space of about half an inch between the surface of the soil and the glass. Put in a shady place and keep moist. In a few weeks the sporelings will appear, and when they reach the glass remove it, or preferably raise it by pieces of wood. When the sporelings can be handled, pot singly.

Topping Oleanders (H. M.).—Oleanders may be cut back to any extent. They will break freely from the old wood, so that you may cut them down to within a few inches of the soil—say 6 to 9 inches—so as to secure a stem of a few inches length. Keep rather dry a short time before and after cutting down, and then water and syringe so as to encourage growth. Avoid, however, making the soil sodden by unnecessary waterings. If you cut the plants down they will not flower this year, and perhaps not next, as it must make and ripen good growth before doing so. We should put in cuttings of the strong growths in sandy soil; they root freely in gentle bottom heat, such as that of a Cucumber bed, and make very useful plants in 6 or 7-inch pots. Cuttings would also root in the conservatory if covered with a hand-light or bell-glass. Plants so raised would, no doubt, flower next year. The old plants could be kept through the year, and you will have the benefit of the flowers now showing. They require to be well supplied with water when swelling the buds and making growth, and kept rather dry in winter, but not so as to bring down the foliage. An occasional syringing is of benefit; avoid, however, wetting the flowers, as they are liable to damp.

Horticultural Exhibits and Railway Charges (W. H. J.).—As we had no really authoritative information on this subject, we communicated with the Great Eastern Railway Company, whose reply is as follows:—"In reply to your letter I beg to inform you that no alteration whatever has been made in our rates and arrangements for the conveyance of exhibits to and from horticultural shows. (a) Plants, fruit, or flowers, to or from flower and agricultural shows, are charged single owner's risk (or company's risk) rates for the double journey, providing they remain the property of the exhibitor. (b) Passengers travelling with plants and flowers are (on all occasions) allowed to carry as luggage or part of their luggage, the usual weight free, any excess being charged for at the excess luggage rate (owner's risk). When conveyed under the latter arrangement any excess has to be paid for both on the forward and return journeys. Exhibitors at horticultural shows have therefore the option of having their consignments charged at the ordinary trade rates as per clause (a), which are very low (in no case on this line exceeding 2s. 4d. per cwt.), and this insures free return in case the goods are unsold, or if travelling with them they can claim the usual allowance under clause (b), and in the event of any excess, pay for same at the excess luggage rate both going and returning." This will probably apply to all the English railway companies, but we cannot say definitely.

Names of Plants (Stirling).—*Rhodochiton volubile*. (C. P.).—1, *Geum coccineum*; 2, *Papaver nudicaule*; 3, *Centranthus ruber*. (F. J. L.).—1, *Viburnum plicatum*; 2, *Weigela amabilis*; 3, *Astrantia major*; 4, *Cercis siliquastrum*, the Judas Tree; 5, *Ornithogalum nutans*; 6, *Saxifraga rotundifolia*. (D. M.).—1, *Blechnum spicant*; 2, *Adiantum pubescens*; 3, *Aërides F'eldingi*. (E. J.).—*Solanum nigrum*. (Mac).—1, *Calycanthus floridus*; 2, *Tacsonia*, probably *Van-Volxemi*, good leaves ought to have been sent; 3, *Stapelia*, probably *normalis*; 4, *Phyllocactus* sp., flower decomposed on arrival. In Nos. 2, 3, and 4, good flowers and leaves ought to have been sent, as when several species are closely allied it is impossible to be absolutely certain with incomplete specimens.

Covent Garden Market.—June 20th.

MARKETS heavy and dull.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, Tasmanian... ..	8	0 to 18	0	Grapes, black	1 0 to 3 0
Apricots, box	0	8	1 3	Lemons, case	10 0 30 0
Cherries, box	0	9	1 3	Melons, house, each ...	1 0 2 0
„ ½ bushel	5	0	10 0	Oranges, case	10 0 25 0
„ ¼ bushel	3	0	6 0	Pines, St. Michael's, each	1 0 6 0
Gooseberries, ½ bushel	2	0	2 6	Strawberries,bskt 4 to 6 lb.	2 0 3 0

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, green, doz. ...	1	6	to	2	0	Mushrooms, lb.	0	6	to 0	8	
Asparagus, green, bundle	0	9		3	0	Mustard and Cress, punnet	0	2		0	
" giant, bundle	9	0		12	0	Onions, bag, about 1 cwt.	5	6		6	
Beans, bushel	1	0		3	0	" Egyptian, cwt. ...	6	0		0	
" Jersey, lb..	0	6		0	9	Parslev, doz. bunches ...	2	0		4	0
Beet, Red, doz....	0	6		0	0	Peas, Jersey, lb.	0	9		1	0
Cabbages, tally	5	0		7	6	" English, per bushel	4	0		6	0
Carrots, new, bunch	0	3		0	6	Potatoes, cwt.	5	0		10	0
Cauliflowers, spring, doz.	4	0		6	0	" new Jersey, cwt.	12	0		15	0
Celery, bundle	1	0		1	9	" Teneriffe, cwt....	12	0		14	0
Cucumbers, doz.	2	0		4	0	Radishes, long, doz.	0	6		0	0
Endive, doz.	1	6		2	0	" round, doz.	1	0		0	0
Herbs, bunch	0	2		0	0	Shallots, lb.	0	4		0	0
Leeks, bunch	0	3		0	0	Spinach, bushel	2	0		0	0
Lettuce, doz.	0	6		0	0	Tomatoes, English, doz. lb.	3	0		5	0
" Cos, score, from ...	0	6		2	6	Turnips, new	0	4		0	8
Mint, green, doz. bunches	2	0		0	0	Vegetable Marrows, doz....	6	0		8	0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums	2 0	to 3 0	Mignonette, doz. bunches	2 0	to 3 0
Asparagus, Fern, bunch...	2 0	2 6	Narcissus, double white,		
Carnations, 12 blooms ...	1 6	2 0	doz. bunches ...	4 0	8 0
Cattleyas, per doz.	0 0	12 0	Odonoglossums	5 0	7 6
Eucharis, doz.	4 0	6 0	Pelargoniums, doz. bnchs	4 0	6 0
Gardenias, doz.	1 6	2 6	Pæonies	6 0	12 0
Geranium, scarlet, doz.			Roses (indoor), doz....	2 6	3 6
bunchs.	6 0	9 0	„ Red, doz.	2 0	4 0
Iris, various, doz. bunchs.	6 0	12 0	„ Safrano, doz.	2 0	3 0
Lilium Harrisii, 12 bloom.	3 0	4 0	„ Tea, white, doz. ...	2 0	3 0
„ longiflorum, 12 blooms	3 0	4 0	„ Yellow, doz. (Perles)	3 0	4 0
Lilac, white, bundle ...	3 0	4 0	„ Maréchal Niel, doz.	6 0	12 0
Lily of the Valley, 12 bun.	6 0	18 0	„ English (indoor):—		
Maidenhair Fern, dozen			„ La France, doz. ...	3 0	6 0
bunches	6 0	8 0	„ Mermets, doz	3 0	8 0
Marguerites, doz. bunchs.	3 0	4 0	Smilax, bunch	4 0	6 0
„ Yellow doz. bunchs.	3 0	4 0	Tulips, yellow, bunch ...	1 0	1 6

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.				
Acacias, per doz.	12	0	to 24	0	Foliage plants, var., each	1	0	to 5	0
Arbor Vitæ, var., doz.	6	0	36	0	Genistas, per doz.	8	0	15	0
Aspidistra, doz.	18	0	36	0	Geraniums, scarlet, doz....	6	0	10	0
Aspidistra, specimen	15	0	20	0	„ pink, doz.	8	0	10	0
Azaleas, various, each	2	6	5	0	Hydrangeas, white, each	2	6	5	0
Boronias, doz.	20	0	24	0	„ pink, doz.	12	0	15	0
Crotons, doz.	18	0	30	0	Lily of Valley, per pot	1	0	2	0
Dracæna, var., doz.	12	0	30	0	Lycopodiums, doz.	3	0	6	0
Dracæna viridis, doz.	9	0	18	0	Marguerite Daisy, doz.	8	0	10	0
Erica various, doz.	8	0	18	0	Mignonette, doz.	8	0	12	0
Euonymus, var., doz.	6	0	18	0	Myrtles, doz.	6	0	9	0
Evergreens, var., doz.	4	0	18	0	Palms, in var., each	1	0	15	0
Ferns, var., doz.	4	0	18	0	„ specimens	21	0	63	0
„ small, 100	4	0	8	0	Spiræas, per doz.	8	0	12	0
Ficus elastica, each	1	6	to 7	6					



The Agricultural Returns.

WE have been favoured with a copy of the above for 1899, and though 260 pages of statistics are too much to deal with closely, a few points of general interest may be found.

Greater confidence in the future of the Wheat trade may have accounted for the increase of 213,000 acres in the Wheat area of 1898, but if so the confidence must soon have been dispelled, for in 1899 there was a reduction of 101,225 acres, leaving the aggregate but little over 2,000,000. The lessened demand for Wheat straw and its low price may have been a factor in causing this diminution in the acreage. Barley and Oat straw always have their home value as fodder, but

we have known cases where an accumulation of Wheat straw was a nuisance, the farmers not being allowed to sell, so they burnt it. Barley gained three-fourths of the area lost by Wheat; Oats gained the remainder, as well as 17,000 acres lost by Rye. Peas are on the decrease, but Beans, after two years' comparative neglect, return to their normal acreage.

Potatoes do not vary much, but Turnips and Swedes once more show a loss—viz., 34,000 acres, the area having declined from over 1,500,000 acres in 1875 to 1,233,880 last season. Mangolds have increased 20,000 acres, and we are very glad of this, for we are convinced that many farmers have falsely founded prejudices against this most valuable crop, which deserves a much larger acreage. Cabbage also is not grown as largely as it should be, and we are glad to see an increase under the heading of Cabbage, Kohl Rabi, and Rape, and hope the first is chiefly responsible for it.

British horses are stationary in numbers, but cattle show a very satisfactory increase of 170,000. It is interesting to note that notwithstanding this, the non-breeding cattle over two years of age have decreased by 14,000, and the assumption may be made that British farmers are gradually being convinced that old bullocks do not pay them so well as they pay the butcher. There is a large increase in cows and heifers, and it is to be hoped that greater efforts will be made to retain the large sum of money the nation pays for imported milk—last year nearly £1,500,000, to say nothing of the butter, the imports of which reached the enormous sum of £17,250,000, being £3,000,000 more than in 1895.

A noticeable fact in connection with the butter imports is that France sent us £500,000 worth less butter in 1899 than in 1895, whilst Denmark sent us $1\frac{1}{2}$ millions worth more, other countries showing a large advance being Holland, the United States, and Canada, the progress of the latter being most remarkable, for she sent us seven times as much butter in 1899 as in 1895, and the increase is steady as well as persistent. It is quite evident that the British butter produce has not yet seen the worst of foreign competition and attention must be chiefly directed to producing the very best article, so that he may not have to take 7d. and 8d. per lb., as many farmers' wives are doing now, whilst foreign made stuff is selling at 1s. in their own market town.

Very interesting tables are those giving the number of fat animals and quantities of dead meat sold in the London markets during the last twenty years. British fat cattle have decreased from 200,000 in 1879 to 86,000 in 1899, whilst foreign have increased from 126,000 to 168,000. British sheep have dwindled from 807,000 to 546,000, whilst foreign have gone down from 1,556,000 to 844,000. Taking British and foreign together we find a large diminution both in live cattle and sheep. How has London been fed? The dead meat statistics answer that question. The quantities for 1899 are almost double those for 1879, being 8,109,000 cwt. and 4,272,000 cwts. respectively. This increase of 4,000,000 cwts. is equivalent to 300,000 cattle and 3,000,000 sheep. Accepting the latter figures as being about correct, and adding together the supplies live and dead, we find that the dead meat has made up the deficiency in the live animals and increased the general supply by quantities equivalent to 220,000 cattle and 2,000,000 sheep. It is obvious that the consumption of meat has much increased, as prices have come more within reach of the working classes, and that the imports of chilled and frozen meat are likely to increase, for of the increase of 4,000,000 cwts. of dead meat imports 3,000,000 are accounted for by American and Australian killed meat, *i.e.*, chilled or frozen.

If we look at the statistics of foreign flocks and herds we find that Australasia owns 12 million cattle and 100 million sheep, whilst the two South American States, Argentina and Uruguay, own between them 26 million cattle and 90 million sheep. Here are almost unlimited possibilities for extension of the frozen meat trade, and the price of second-class meat must, at any rate in our time, be kept down to a low figure by the competition from these countries. All this points yet again and more strongly to the breeding of animals with a view to the butcher's requirements to meet the first-class trade, for it

is such stock which are now very dear and likely to remain so. Supplies of the best British meat must get proportionately smaller as the population increases.

It is also very unlikely that this trade will be affected by Continental competition, for the statistics of live animals belonging to our Continental neighbours show diminutions which may be considered quite alarming, and should be so to the authorities of those countries. For whilst Great Britain has not only fully maintained her flocks and herds but increased them, how can we account for the following figures? Austria and Hungary together have increased their cattle from $12\frac{1}{2}$ millions to 15 millions, but their sheep have fallen from 20 millions to 11 millions. France is stationary as regards cattle, but has lost $1\frac{1}{2}$ million sheep. Germany has increased her cattle by $2\frac{1}{2}$ millions, but has reduced her flock of sheep from 25 millions to something under 11 millions. The smaller countries, Holland, Belgium, and Denmark, tell much the same tale, and the lesson the farmer may learn if he will is, that however the trade for good fresh beef may fluctuate, he has the trade for the best home killed mutton in his own hands.

One table which rather took our fancy is one giving the average prices of the various kinds of grain sold in each of the principal markets during 1899. At the first glance the comparison of prices between one market and another promised to be interesting, but really only bears out what should be foregone conclusions—viz., that Wheat is dearest near the great centres of population, but does not vary much, whilst that Barley on big exchanges is much affected by the proportion of grinding qualities and makes the highest price in the neighbourhood of large maltings. Probably the good quality of the Barley induced the building of maltkilns.

A feature of the returns is the exceedingly bad Turnip crop of 1899, but we have all seen enough of that, and it needs no further discussion.

Work on the Home Farm.

The tropical weather of the past few days is doing an immense amount of good, and will give a very much needed fillip to many backward crops. More rain, however, is needed, the thunderstorms have been very partial, and a good general rain coming at once would improve prospects more than anything.

Wheat is running fast towards the ear, but few heads will be visible until July. Barley is improving in colour and is growing well, but some fields will be short in the straw unless we get the rain.

Mangold are much improved; weeds, however, have been troublesome, and although the young Mangold are rather small for singling, they will be best hoed at once so as to get rid of the weeds. There should be little more trouble now with the Turnip fly, for small Turnips love hot weather, and Swedes will soon be ready for hoeing. The main crop of common Turnips are going into a perfect hotbed, and must do well. We think this year's Turnip crop must be secure.

The horse hoe must be made use of whenever possible, leaving as little work for the hand hoe as can be managed. Some farmers, as we have mentioned in a previous article, run a set of harrows across the Turnip rows when labour is not available, thus thinning the plants until men can be found to finish the process. A horse hoe for corn crops is also sometimes useful to run across Turnip rows, but it requires careful manipulation, being somewhat drastic in its effects. It acts better amongst Turnips grown on the flat than amongst those on ridges. The plant also must be a very good one—*i.e.*, very even and regular, but not too thick. Field Potatoes look very well, and the earthing plough is at work in some cases for the second time. The land is rather dry between the ridges, having been knocked about a good deal, and is much inclined to fall back into the furrow. A nice rain would do good here.

Buyers of wool are hovering round, and though they cry down the prospects of the trade we fancy prices will be a little higher than they have been recently. Prices of wool often vary much in the same place, the stapler bidding freely for a good clip, and badly for one in which he expects, from old experience, to find much dirt and badly washed wool. We still think the man who washes his sheep well gets paid the best in the long run.

Live Stock Feeding in Yorkshire.—The authorities of the Yorkshire College, Leeds, in conjunction with the East and West Ridings Joint Agricultural Council, have issued a report on the pig-feeding experiments made at Garforth. They conclude that a mixture of barleymeal and sharps is better than barleymeal and maize, and that the latter mixture may be somewhat improved by the addition of a highly nitrogenous meal. A report has also been issued on cod liver oil as a substitute for cream and for meal in calf rearing.—(“Yorkshire Post.”)

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Journal of Horticulture.

THURSDAY, JUNE 28, 1900.

The *Journal of Horticulture* can be obtained
 from the Office, 12, Mitre Court Chambers, Fleet St.,
 London, post free for a Quarter, 3/9. Editorial
 communications must be addressed to 12, Mitre
 Court Chambers, Fleet Street, London.

The Changes of Horticulture.



I CANNOT claim to be an ancient
 sage who has marked the changes
 and progress of horticulture during
 a long roll of years, and thus
 gathered wisdom at each step, but

to me everything in life is judged by
 comparison, and I find great interest in
 watching the "signs of the times," noting
 the direction in which they trend, and
 comparing them with memories of twenty years
 ago. The point in connection with both horti-
 culture and agriculture which at the present time
 strikes me most, is the dearth of well-grounded,
 painstaking recruits. True, we have schools of
 horticulture, and even lady gardeners, but I fear
 that the majority of recruits who are trained
 in such schools look upon a theoretical knowledge
 as a substitute for rather than an adjunct to the
 hard work and continuous efforts by which alone
 real gardeners are made.

The value of a scientific training is undoubtedly
 great in moulding the mind to those habits of
 close observation and systematic research which
 in after life should form the stepping stones to
 successful management when responsible posts
 have been attained. All probationers ought, how-
 ever, to remember that the reward for theoretic
 knowledge will not come in the early stages of
 their career; it should rather be regarded as so
 much "capital" invested for interest in the future.
 Neither will it ever be a substitute for thorough
 practical knowledge and capacity for work, both
 of which are indispensable in carrying out a
 successful career.

Given two men with equal talents and oppor-
 tunities, the one who possesses both practical and
 scientific knowledge is generally more likely to
 attain distinction than the other, who, however
 good in practice, has neglected the scientific part.
 I write "generally" because there is another
 element which plays a potent part in moulding
 careers in these days of keen competition, i.e.,
 continuous effort—energy; without it no lasting
 success can be achieved, and this explains the fact

that the "plodder" with perhaps few natural talents frequently out-distances his fellows who rise above him in real ability, which they turn to little account, simply because they lack energy or possess it only in a spasmodic sense, and are therefore wanting in stamina.

But what about "the lady gardener?" some may ask. Is she destined to become a real and serious force in the horticulture of the future? I think not. Let us admit that those who conceived the idea of founding establishments for the training of lady gardeners were actuated by the best of motives in opening up new fields of employment—new spheres of influence—for the gentler sex, yet I think there are few practical horticulturists who have much faith in the movement. They hold that women as a rule are physically unfit to accomplish the laborious work which it is necessary for them to undergo in order to become well trained gardeners. I will go still further and say that 99 per cent. of those who have intelligence and ambition enough to aspire to become the gardener-in-chief in some extensive establishment have not the inclination to undergo the necessary drudgery, or if they possessed the inclination for a time it would disappear before their object was attained. The desire to secure a post which to many seems an ideal one may be strong in hosts of women, but between the wish and the accomplishment thereof arises a mountain of difficulties which not more than 1 per cent. can hope to surmount. In the lighter tasks of horticulture connected with the businesses of florists, there is a great and remunerative sphere of work open to women, work which is in every way suitable for them, and for the performance of which they have intuitive talent, but as real all-round gardeners the ladies are a failure, unless their object is to qualify for becoming the wives of mere men gardeners. As a matter of fact many gardeners' wives have a fund of horticultural knowledge, that many a college-trained lady gardener would envy did she but suspect its existence.

Gardening for pleasure is a delightful pastime for any lady, but it is a totally different matter to enter upon the work with the object of getting a living at it, and I fear that many have already been induced to take up gardening as a serious business of life only to meet with bitter disappointment, as they gradually find out that in the occupation which looks so pleasant upon the surface there is such constant laborious work to be done and so much dogged perseverance needed. Youths do not now take to gardening as a calling so readily as formerly, because they find so many opportunities of starting in other occupations which offer better prospects and less drudgery in the early stages. Is it therefore likely that women will be long in finding this out? I think not; the lady gardener has not come to stay, but will change her calling as quickly as the fashions change. There are, one must admit, advantages to be found for women in gardens, but these lie rather in the health-giving fresh air of some of the work than in the avocation as a means of livelihood.

There is, however, a great problem in connection with both horticulture and agriculture which will have to be dealt with before long, as the depopulation of villages and great scarcity of labour during the summer months are more apparent each year. This problem, in my opinion, will only be solved by the importation of foreign labour. Education has done, and is doing, a great work in fitting the British for the parts they are to play in the progress of the world. With a splendid world-wide empire which is daily becoming more solidified, there will be a growing demand for men with energy and brains in all parts to act as the guiding spirits in horticultural undertakings where native labour is abundant; and those who shirk no task during the training they receive in their early days—and thus make themselves proficient in both science and practice—will meet with their reward. They will also help to uphold the supremacy of the Empire in distant lands, while to perform the menial work in Britain, Kaffirs, Chinamen, and perhaps Japs, will be imported. This seems to me to be a gradual process of evolution which education is working in the British race. In time it will bring prosperity by leaps and bounds, and when that time comes the great problem as to "spheres of influence" for women will solve itself—there will be no necessity for them to compete with men in the labour markets of the world.—ONWARD.

Bouquets of Wild Flowers.

IT was a matter of common observation that wild flowers proved scarce during the summer of 1899 in many parts of Kent, and probably elsewhere also. Familiar species of the fields, hedgerows, and woods which had struggled into bloom speedily disappeared, and others, which are usually abundant, never flowered. This we assume was to be attributed to the dryness of the year, both spring and summer being very deficient in rainfall, while the intense heat of the sun dried up many plants, even to the roots. We had plentiful rains in the early months of 1900, and though April was a little dry, if we get some pleasant showers during June it is likely we shall have soon a good display of wild flowers generally.

This is of interest to large numbers who live far away from the country, as it is one of the philanthropic agencies of our day, forwarding newly gathered wild flowers to hospitals, workhouses, schools, and sick persons in towns, the occupation of collecting and packing affording agreeable employment to those having the opportunity, with spare time. Unfortunately, it sometimes happens that bouquets or parcels of flowers arrive in a condition which is disappointing to the receivers; possibly the weather may be blameable, or the postal authorities, but often the cause is injudicious picking and packing. For one thing, with the majority of wild species, it is no use to send fully expanded flowers; they dry or fall to pieces. Sprigs and stems, severed by a pull, will fade more rapidly than if cut off with a knife or scissors. Nor is it advisable when that can be avoided to gather flowers which are to travel during the heat of a summer's day; it is better to take them in the cool of early morning or evening. We frequently see children carrying bunches of wild flowers in their warm hands, they are seldom worth keeping if taken far exposed to the air. Should they not be enclosed *pro tem.* in a tin box or case, like the botanist's *vasculum*, they may be laid in a basket of some kind, where they can retain any moisture there is about them, and even in a bag of cloth or leather they will not be injured, only a mixed gathering of plants, tough and tender, must not be pressed closely together in transit.

Some people say that if wild plants are lifted by the roots and then sent away, they keep fresher than do portions cut off; but it is not always convenient to remove them thus, and except in the case of very common species it is scarcely advisable to carry them from their habitats bodily. It is this digging up of specimens which has almost denuded many woods of Primroses and Violets, though it has enriched gardens for a time. Again, some persons think that when wild flowers have had an hour's journey or more, before they are brought indoors they should be freshened up by putting the stalks in water before they are packed to send away. "Wood Anemones," remarks Miss Jekyll, "protest against being picked, and come home limp, closed, and looking very unhappy; all the same they will recover if they have a bath for an hour or two." Certain delicate Umbellifers suffer, and rosaceous species, too, unless carefully dealt with, but we have sturdy wildlings which do not mind rough treatment. Then there are some wild flowers that appear averse to living in water even for a brief period, in spite of such expedients as putting fragments of charcoal in, or adding a little ammonia and other contrivances for vitalising them. The lady above named also tells us that sprigs or branches taken from hardwooded trees and shrubs should have the cut end sliced up one side, or cut through the middle, which enables the water to enter more readily. She has even found it serviceable to give an end of a twig a smart blow with a heavy hammer.

When it comes to packing wild flowers to travel by post or rail, I think, while all crushing should be avoided, it is desirable to put them together closely. Nor do they require air while travelling. A loose arrangement in packing causes a vibration, or perhaps abrasions, which are damaging to many flowers. Tin boxes might be considered preferable, though some prefer a light wood to these, because the tin is more affected by the sun or other heat if the package should

be exposed to an advanced temperature in travelling. Gardeners frequently use wet cotton wool for packing flowers and fruit. I am partial to it myself. If one has time and patience it is well to place a little damp moss about the ends of the plants or flowers, and some dry moss above to prevent shaking. The leaves of Monk's Rhubarb (*Rumex alpinus*) are capital for a wrap, keeping the flowers cool, and warding off pressure. It is decidedly objectionable to make the plants very moist, as in summer decomposition may set in before the journey's end. Small parcels of plants will travel all right if fastened in corrugated paper without any box.

When released at their destination stems and twigs should be cut again at the ends before they are put into water, nor is it good to



FIG. 147.—ODONTOGLOSSUM ROLFE, WALTON GRANGE VARIETY.

supply them with that which is drawn from a cistern where it is cold. Water just tepid is preferable, and this should be renewed daily, also removing any dead portions of the plants. In this way I have seen wild flowers kept fresh for a week or more, but of course they should not be exposed to the sun or a glare of artificial light.—J. R. S. C.

Odontoglossum Rolfe, Walton Grange variety.

ONE of the most beautiful Orchids at the meeting of the Royal Horticultural Society held in the Drill Hall on June 19th was *Odontoglossum Rolfe*, Walton Grange variety, of which a flower is admirably portrayed in fig. 147. The plant was shown by Mr. W. Stevens, gardener to Wm. Thompson, Esq., Walton Grange, Stone, Staffs, and the Orchid Committee recommended a first-class certificate. It is a hybrid from *O. Harryanum* and *O. Pescatorei*, and traces of both parents are clearly discernible. Both the sepals and petals are very broad, and have the most profuse brown markings; the ground colour of the former is pale rose, this shade also prevailing at the tips of the latter. The lip is broad and flattened, the front lobe being white and the basal portion brown and crimson.

The Royal Horticultural Society.

The Proposed Bye-Laws.

A VERY urgent appeal has been made to me in my official capacity as Secretary of the R.H.S. by certain of the Fellows who are most anxious to show their loyalty to the Council by supporting them in their proposals with regard to the bye-laws of the Society, but are unable to do so entirely so long as Nos. 45, 46, 47 are retained. They have no objection whatever—many of them cordially approve of—the Swiss principle of a referendum, "Aye" or "Nay," on any important proposal, but they dislike a general proxy.

At this late date I have no time or authority to call the Council together to consider this point. I am therefore writing quite unofficially to say that I am confident that the Council will accept a permissive referendum on points they think to be vital to the Society's welfare. The Council, I am convinced, have no desire for a general proxy, but they feel, and feel very strongly, that as the Society has recently been increased by such an enormous accession of Fellows living at a great distance from London, it is unjust to confine the whole governing power of the Society to Fellows living in or near London, which would practically be the case if no referendum on important points is permitted.

The Council would, I am sure, accept the three following bye-laws in the place of the three whose numbers they bear, together with the form for a referendum which I have drafted.

I have written this letter solely in order that Fellows may have time to consider the matter, and to induce country Fellows to come up to the meeting of July 3rd and support a measure for their own enfranchisement.—W. WILKS, *Shirley Vicarage, Croydon, June 25th, 1900.*

Alternative Bye-Laws.

- 45.—With respect to any resolution brought before a general meeting, and considered by the Council to be of vital importance to the welfare of the Society, the Council shall have power to adjourn the meeting for not more than twenty-eight days, in order to refer the decision on such resolution to the whole body of the Fellows, and to take a poll of the Fellows "for" or "against" it.
- 46.—In the event of any resolution being referred for decision from a general meeting to the whole body of Fellows, the Council shall within ten days after such meeting issue by post to every Fellow of the Society residing in the United Kingdom a copy of the resolution thus referred, together with the necessary form (Form D) for voting for or against it. But the Council shall not therewith or otherwise at the expense of the Society send any communication tending to influence the vote of the Fellows.
- 47.—When any resolution is referred from a general meeting to the whole body of Fellows for decision the general meeting shall, before it adjourn, be requested by the chairman to nominate four scrutineers of the poll, whose duty shall be to examine and classify the votes of the Fellows, and report the result to the adjourned general meeting. Two of the scrutineers shall be chosen from amongst the members of the Council, and two shall be Fellows holding no official position in the Society. In a poll every Fellow shall have one vote, and one only.

Form D.

Form to be used in event of the Council considering any resolution submitted to a General Meeting to be of sufficient importance to require a poll of the Fellows to be taken to decide it.

At a General Meeting of Society, held on [date] the following resolution was proposed and seconded—viz., [here insert the resolution.]

The Council considering this a matter of vital importance to the welfare of the Society, and acting under Bye-Laws 45, 46, 47, adjourned the meeting till [hour], on [date], at [place] in order that meanwhile a poll of the Fellows may be taken.

You are requested to sign your name in one or other of the two blank spaces below, and to return this paper entire to The Scrutineers, R.H.S. Office.

I desire to vote FOR the above resolution.	I desire to vote AGAINST the above resolution.
Fellow's } Signature }	Fellow's } Signature }

This paper is issued by order of the Council, and is sent by post to every Fellow residing in the United Kingdom.

.....
Secretary.

N.B.—Nothing is to be written on this paper but the Fellow's signature.



Rose Show Fixtures in 1900.

- June 30th (Saturday).—Maidstone and Windsor.
 July 3rd (Tuesday).—Westminster (R.H.S.), and Gloucester.
 „ 4th (Wednesday).—Croydon, Ealing, Farnham, Hereford, Reigate, and Tunbridge Wells.
 „ 5th (Thursday).—Bath, Norwich, and Sutton.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Harrow and Wolverhampton.†
 „ 11th (Wednesday).—Brockham and Farnby.
 „ 12th (Thursday).—Brentwood, Salterhebble, Woodbridge, and Eltham.
 „ 13th (Friday).—Ulverston.
 „ 14th (Saturday).—Manchester.
 „ 17th (Tuesday).—Carlisle.
 „ 18th (Wednesday).—Cardiff. *
 „ 19th (Thursday).—Birmingham (N.R.S.) and Helensburgh.
 „ 21st (Saturday).—New Brighton and Newton Mearns.
 „ 24th (Tuesday).—Tibshelf.
 „ 25th (Wednesday).—Newcastle-on-Tyne † and Belfast. *
 „ 26th (Thursday).—Bedale.

* Shows lasting two days. † Shows lasting three days.

Summer Treatment of Roses.

THE successful cultivation of Roses by whatever method they are grown is largely governed by correct treatment in summer. On light, dry, hot soils mulching is necessary in order to prevent the rapid escape from the surface of the limited amount of moisture. Additional supplies of liquid food must also be given as sustenance for the roots, much of the available moisture present in the ground during the earlier part of the year being either appropriated by the roots or draining away in the subsoil. This is especially the case with old Roses, which being of large size and having a strong system of roots make heavy demands upon the nutriment available. With an unlimited rooting medium they can and do find what they require, but Roses are frequently grown where they have not this advantage, hence a deficiency arises if the supply of moisture is not duly maintained.

The results accruing from this make a decided mark upon the future success of the plants, if not upon their present condition in lessening the vigour of the display of bloom. If the failure of support occurred soon enough in the season, it would affect the blooming to a large extent, as at that time support generous, unflinching, and regular is needed for the full development of the blooms, and imparting to them depth and richness of colouring. An adequate supply of moisture not only benefits the blooms, but assists the healthy and vigorous production of new growths. Much of the unsatisfactory progress made by Roses is due to dryness in the soil. Something may be due to poverty of soil, but a dry soil, however good, cannot help being poor during the time it remains in a dry condition.

Health and vigour are the great antidotes to insect pests and fungoid attacks. These evils can only make headway when plants are at a standstill as regards summer growth. A temporary cessation of progress may cause an attack of aphids, but permanent checks induce troubles which are more lasting in their effects. Mildew is perhaps one of the greatest foes to Roses, because when it takes possession it is difficult to completely eradicate it. The best remedies are sulphur for the leaves, and moisture and food for the roots.

Frequent syringing of the foliage during the warm weather is undoubtedly a great advantage for Roses on walls and other positions where rain and dew do not easily reach the foliage. Clear water is all that is necessary when there are no insects present, but soapy water or soapsuds will prove efficacious if green fly, which attacks the points of young shoots, or the yellow fly, which commits so much havoc on the under sides of the leaves, happen to be present.

The summer pruning of Roses is not generally necessary, though gross shoots and weakly spray may be removed with advantage. Banksian Roses should be pruned after flowering, cutting out shoots of a gross character and removing the tips of those retained. Mosses, Provence, Austrian, and Penzance Briars require the old shoots removed in summer after they have bloomed. Dead, decaying, and exhausted wood is best removed whenever it is noticed. Immediately flowers fade pick them off the plants. As the growth of climbers advances secure it to the wall or the training space to be filled. This gives an opportunity to properly fill the area without crowding and insures the thorough ripening of the wood.—E. D. S.

Hardy Flower Notes.

WITH June there comes a greater richness of beauty than the earlier months can give, though the beauty can be of no higher order than that of the winning days of spring. With the early days of the month the outdoor Roses generally appear. The grand Roses which are so fine on the show board have no want of supporters in the columns of the Journal; and, besides, not one of these had opened at the time of writing. A Monthly or two have appeared, but they are so accommodating and so floriferous that one never wonders to see their blooms, whether they come at midsummer or in midwinter. It is not so, however, with the Rose species, some of which have begun to appear. There are a few beautiful blooms on *Rosa rugosa*. Fine also is the Rose known as *altaica*. A few days ago I saw a great bush of *Rosa sericea* with a host of beautiful single creamy white flowers. The little buttons of the double yellow Scotch Rose will open in a day or two. They will soon be accompanied by the others of the family, whose flowers have inspired many songs and tales.

Shrubs and trees, large and small, are also full of glorious or of quiet loveliness. Laburnums and pink and scarlet Thorns are to the garden what the common Hawthorn is to the field. Full of beauty are they. One naturally turns, however, to the things which are less seldom seen. *Cytisus scoparius* Andreanus has found its way into favour more rapidly, perhaps, than any shrub of recent introduction. Very beautiful is a huge bush of it when covered with its brown and golden flowers. By the rustic stone steps in the garden is a fountain of the white Portugal Broom, than which nothing looks finer against its background of fresh green Ivy. Prized because of the pleasing variegation of white and green in its foliage is *Cytisus scoparius* variegatus. It must be said, however, that this colouring takes from the effect of the golden flowers which always show so well in contrast with the deep green of the typical plant. Then there are the varieties of *Cytisus purpureus* with their varied shades of purple, none being prettier than *C. purpureus incarnatus*. But one must turn to other things.

There is nothing in the garden at the present time finer than the German Irises with their marvellous colouring. They are so numerous in their varieties, and all are so beautiful, that one can hardly pick out a few and say "these are the best." The new Irises will gradually come into the market, but no one need wait for them, for the older varieties are beautiful enough to give pleasure with their charming flowers and that wonderful colouring, which defies description, and strikes one with increasing admiration as the flowers are studied with keenest scrutiny. These German or Bearded Irises are never so happy as in a place where they can be roasted in summer and have full exposure to the sun at all times. Six inches of soil on a wall or roof will grow them well provided they are "anchored" by having stones placed on the rhizomes.

The glory of some gardens now, and the pride of their owners, lie in the spikes of a few of the Eremuri, whose fortunes in our gardens the writer has followed with much interest. They have been seen where their magnificence was indisputable; they have, alas! been seen and heard of in gardens where disappointed owners could only lament their inability to grow them so as to persuade them to flower. There is no infallible treatment which can be advised. One thinks and proves that they will grow best with him in a semi-shaded position, while another finds they do best in full sun. One advocates deep soil, and another can grow them well on a hard bottom with only 6 inches of loam and manure—3 inches above and 3 below the roots. So noble are the Eremuri that one will do well to persevere with them, even if success should not at first reward one's efforts.

The Pink is likely to remain a favourite flower, though the laced varieties of the florists are at present under a cloud, awaiting, perhaps, the time when the artisan who succeeded the hand-loom weaver will wend his way to the outskirts of our overcrowded cities, and find health and pleasure in growing flowers as did his predecessor in pre-factory days. The border varieties do not lack favour, though, and none are greater favourites than the deliciously scented white Pinks. One which I recently saw was named Bradwell White; it is a fine flower, large, and of great beauty and perfume. One of its highest merits is also its grand healthy growth and the sturdy upright stems on which its flowers are produced.

One's pen could run on in telling of flowers as they appear, and of the host now in bloom. The delightful little *Helianthemums* or Sun Roses, and the *Cistus* or Rock Roses open to the morning light, and when dull days prevail last longer than in the brighter hours. The Candytufts have not yet left us, while the tall Lupins rise above their lowlier brethren just as some sacred fane towers far above the less stately dwellings around. Columbines of many hues, and with long and short spurs, dangle from their stalks, though many flowers have passed away and are now followed by their horned seed pods. Then what can one say of the Poppies without incurring the wrath of those who despise their "flaunting" cups? I saw, a while ago, some plants of *Papaver ruporient*, the hybrid from *P. rupifragum* and *P. orientale*. A charming plant is this, surpassing the other hybrids I have from the same parents. Thus might one run on telling of the flowers; but, were it not that they are too many.—S. ARNOTT.

Notes on Rhododendrons.

AMONGST hardy evergreen shrubs Rhododendrons must be accorded the most honourable position in gardens. When in full beauty they are unsurpassed by any flowering evergreen, and when out of flower their shapeliness and bright green foliage render them fitting specimens for the lawn or for massing in beds. They are at home in any position, whether in the neighbourhood of a town or the pure air of the country; under trees, or in the open; in sheltered nooks, or in exposed situations; they are alike suitable, and thrive if their simple requirements are attended to. They, however, do not like soils in which lime and chalk prevail, and in such instances special preparations must be made for them. They are worthy of all this, and of much more care than is bestowed upon them in many gardens.

Rhododendrons will grow under forest trees, but should be planted at the same time, for after trees become large and the soil crammed with roots there is great difficulty in establishing them. Before they have a chance to take possession of the soil by their roots they suffer from drought, and often die the first season after planting. If the large growing trees have been well thinned, and proper stations are prepared by digging as deeply as the soil will allow, incorporating with it leaf mould, manure, loam, or even the refuse of the potting shed, or a quantity of the whole mixture together before planting, success can be insured, especially if the shrubs are well watered for the first season until they have taken possession of the soil. In the front of plantations of forest trees there is less difficulty in establishing them. When once established in woods or plantations in which the leaves of the deciduous trees are allowed to remain they will need little care. When both are planted together and the trees duly thinned they grow rapidly if the soil is of a fertile nature or rendered so by preparation. For undergrowth, as well as for the margins of woodland walks and drives, no other plant equals *R. ponticum*.

In whatever position they may be planted, it is a great mistake to prepare only a small hole and render the soil just surrounding the roots fertile to give them a start. Under this treatment the shrubs grow well for a few years until the prepared soil fails to supply them with the requisite amount of food. They then decrease in health and vigour in proportion as the soil beyond the station made for them is rich or poor. In naturally fertile soils they flourish without farther trouble, but in the majority they become thin and bare, while in others they linger between life and death, only to succumb the first time their energies are severely tested by a long spell of drought, cutting winds, or severe frost. They frequently succeed better in woods when left to Nature for their supply of food than they do in borders and dressed portions of the pleasure grounds. It is in these positions that Rhododendrons, instead of growing luxuriantly, become bare from exhaustion. Every particle of material that would supply them with food is brushed away for the sake of appearance. This I should not object to if the shrubs were supplied with food to sustain them in health and fit them to withstand the adverse circumstances to which they are often subjected.

I have seen these shrubs grow with wonderful vigour in 6 inches depth of heavy soil resting on a bed of clay, and equally well in light sandy loams, also on peaty soils when left to nature. In each instance, as is natural to the Rhododendron, they root nearly on the surface, and their own leaves and those that are drifted under them soon produce a mass of fibres, and the fallen leaves also protect their fine silk-like roots from destruction by drought. In gardens their food is removed, and annually numbers of the surface roots are cut off by the too general practice of digging amongst them. In summer they suffer by drought, and with such treatment well may they be poor, thin, and unsightly.

Planting in exposed positions should be done during the month of September. In sheltered positions Rhododendrons can be planted at almost any season of the year provided the soil is moist; if not, considerable labour is occasioned in watering. Digging should never be practised about the roots; it is only done to give a neat appearance, and prevent leaves that have drifted from being blown out and carried on to the lawn. This is to save labour, which can be accomplished by another method, if not perhaps quite so quickly, with benefit to the shrubs. The loose leaves can be brushed out or drawn out with a rake unless the necessary material is at hand for top-dressing them as the work of cleaning proceeds. Refuse from the garden, such as leaves, the mowings of lawns, and the edgings of walks, make capital material

for top-dressing. The refuse from the potting shed, the surface soil removed from vineries and Peach houses—in fact all soils after they are useless for indoor work—are excellent for this purpose. Often old hotheds are available, and a few loads of soil after the most fibry portion has been removed for potting and other purposes, can be purchased in the neighbourhood of towns for covering leaves or material that might blow about. In some gardens the quantity of refuse from the various departments amounts to a large heap in twelve months, which if thrown together and turned will be found to be ample for top-dressing many clumps and single specimens of Rhododendrons. They root freely into leaves or garden refuse, which generally consist of a quantity of rich fertilising material. On light soils I prefer a dressing of cow manure with a thin sprinkling of soil on the surface, because it retains moisture much longer than a dressing of refuse.—A. N.

Rhododendron Pink Pearl.

When we take into consideration the fact that only one plant received a first-class certificate at the meeting of the Royal Horticultural Society on June 5th, we may safely conclude that it was of exceptional merit. This is certainly true of *Rhododendron Pink Pearl* (fig. 150, page 553), which is one of the finest hardy Rhododendrons we have. It has been previously exhibited, and has received an award of merit, but on this occasion, when it was

shown by Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, the higher honour was recommended. Wherever it is seen it receives unstinted admiration. The trusses are of the largest size, as are the individual flowers; while the colour is particularly pleasing. It is distinct from all its relatives, and ought to be found in every garden where these superb evergreen shrubs are appreciated.

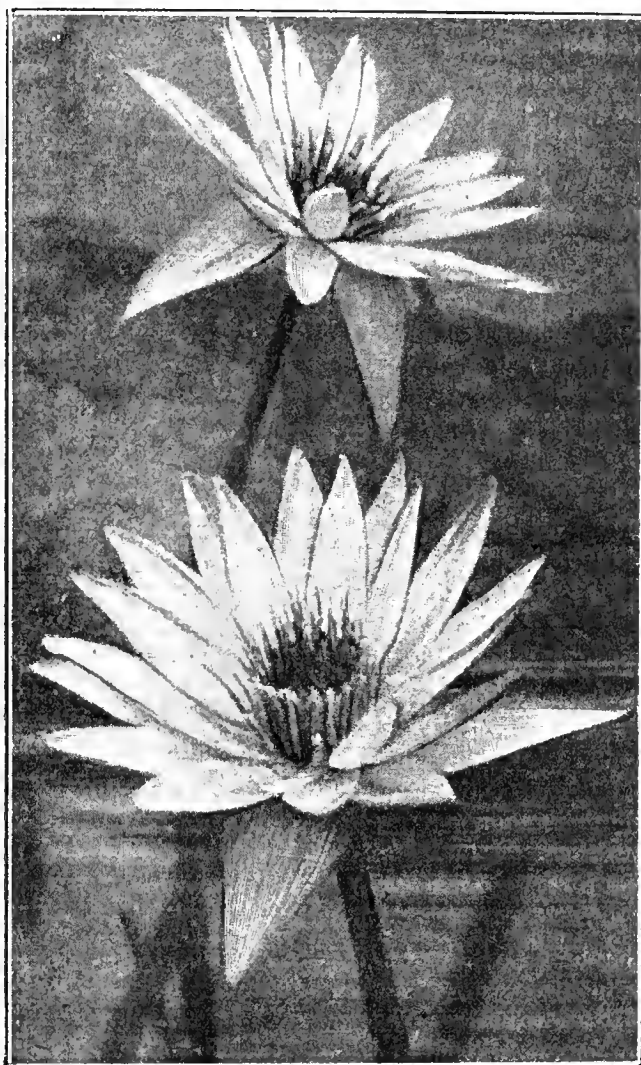


FIG. 148.—*NYMPHÆA STELLATA*.

Nymphaea stellata.

CONSIDERING the great beauty of several of the choicer Water Lilies it is a matter for constant surprise to many persons that they are not more generally grown. The extraordinary exhibit of *Nymphaeas* arranged by Mr. Jas. Hudson, V.M.H., gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton, was an object lesson and an eye opener to hundreds of visitors who had not hitherto appreciated the striking characteristics of the plants. It will be remembered that one of the most charming was *Nymphaea stellata*, two flowers of which are shown in the illustration (fig. 148), that has been prepared from a photograph by Mr. J. Gregory of Croydon. The flowers are of the purest cerulean blue, and have golden stamens, which impart the most exquisite beauty. These flowers rise on stont footstalks to a height of 18 inches above the surface of the water, and enforce universal admiration. In an early issue we propose to give more extended notes of the collection of Water Lilies that forms one of the finest features of the gardens of Gunnersbury House.

NOTES & NOTICES

Recent Weather in London.—There have been thunderstorms in the metropolis during the past few days, accompanied generally by heavy rains. Throughout Monday these conditions prevailed, terrific rainstorms occurring, but no serious damage is recorded. Tuesday was calm, but sunless, and Wednesday opened bright and warm, though occasionally overcast.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, July 3rd, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. On this occasion special prizes will be offered for Roses. At three o'clock a lecture on "Bedding, Hedge, and Pillar Roses" will be given by Mr. George Paul, V.M.H.; and at 4 P.M. a special general meeting will be held to consider the new bye-laws.

Death of a Shrewsbury Arboriculturist.—Mr. W. H. Dove, who lived in Shrewsbury Quarry Lodge, died recently at the age of sixty years. For many years Mr. Dove had had the Quarry under his control, and it was undoubtedly greatly due to his knowledge of arboriculture and taste in the gardener's art that that now delightful place was transformed from barrenness into sylvan and floral loveliness. His death is regretted by a very large number of friends.

Injury to Nursery Stock.—In the case of Cull and Rooke v. the Great Eastern Railway Company an application was made in the Court of Appeal by the defendant company for a new trial or judgment for them. The action was tried before Mr. Justice Grantham and a special jury in March last. It was brought for an injunction to restrain the defendants from permitting their engines to remain stationary at intervals in a siding alongside the plaintiffs' nursery gardens at Coleraine Park, Tottenham, and emitting smoke, smuts and vapours in such a manner as to cause destruction, injury, and damage to the plaintiffs' Vines, plants, and flowers, or from using their engines in such a way as to be a nuisance to the plaintiffs. The plaintiffs also claimed damages. The jury returned a verdict for the plaintiffs, assessing the damages at £400, and judgment was entered accordingly. Mr. McCall, Q.C., and Mr. A. C. Nicoll appeared for the defendants in support of the application, and argued that there had been misdirection on the part of the learned judge, and the verdict was against the weight of evidence, and that the damages were excessive. Mr. Robson, Q.C., Mr. Atherley-Jones, Q.C., and Mr. Crispe appeared for the plaintiffs. We learn from a contemporary that the court ordered that, on the plaintiffs consenting to have the damages reduced to £320, the application should be dismissed.

Royal Meteorological Society.—The second afternoon meeting of this society for the present session was held on Wednesday, the 20th inst., at 70, Victoria Street, Westminster, Dr. C. Theodore Williams, president, being in the chair. Mr. W. Marriott read a paper on "Rainfall in the West and East of England in Relation to Altitude Above Sea Level." This was a discussion of the mean monthly and annual rainfall for the ten years 1881-90 at 309 stations, which the author had grouped according to the altitude of the stations above sea level. The western stations were considered to be those which drained to the west and the eastern stations those which drained to the east of the country. The diagrams exhibited showed that there is a general increase in the annual amount of rain as the altitude increases, and that the rainfall is considerably greater in the west than in the east. The monthly diagrams brought out prominently some interesting features, among which were (1) that the monthly rainfall in the west is subject to a much greater range than in the east; (2) that in the west the maximum at all altitudes occurs in November, but in the east it is generally in October; (3) that in the west the spring months April, May, and June are very dry; and (4) that both in the west and east there is a very great increase in the rainfall from June to July. A paper by Mr. J. Baxendell was also read, giving a description of a new self-recording rain gauge designed by Mr. F. L. Halliwell of the Fernley Observatory, Southport. This rain gauge, which the author believes approaches very closely to an ideal standard, has also the merit of being constructed at a moderate price.

The Cherry Sales.—The annual Kentish Cherry sales concluded on Friday. They made over £30 an acre. Cherries and Strawberries are now being railed to London and the North in large quantities, and according to a daily paper a glut of Cherries this season is probable.

Kent's Strawberries Spoiled.—Kent's Strawberry crop, which partly supplies London and the Midlands with the luscious berries, is being ruined by the heavy rain of the last few days. All the supplies from the open fields are soft and totally unfit for transit, and at Orpington, Swanley, and other centres the whole industry is at a standstill. Thousands of pounds have already been lost, and should the wet weather continue the whole of the outdoor crop will be completely ruined. The growers who raise the best kinds of Strawberries under glass-covered frames are, on the other hand, reaping a rich harvest.

Royal Sympathy and Fruit.—The Queen sent a special messenger to Windsor Royal Infirmary on Friday to inquire as to the progress of the sufferers from the Slough railway disaster, and to ask what would be most acceptable to the patients. Her Majesty was informed through Dr. Farquharson, the house surgeon, that fruit would be much appreciated, and the Queen has therefore ordered a daily supply to be sent from the Frogmore Gardens.

Plum Prospects.—Reports from some of the most important Plum districts in England, including Kent and Oxfordshire, as well as Evesham, now state that there has been an extensive loss of promised fruit as the result of frosts. The crop, therefore, will be a partial one. Cherries are said to have escaped injury, and the "Agricultural Gazette" has seen many plantations in which the trees are thickly covered with young fruit. Early Pears were injured; but Apples at present promise to be abundant. In most districts Gooseberries and Currants show well, and for Strawberries the recent dry and cold weather has not been propitious, though there are great shows of bloom in some places.

Another Lung.—Open spaces in London are being secured wherever possible, and another, the transformed churchyard of Christ Church, Southwark, was declared free to the public a few days ago. Its dedication ceremony was performed by the Bishop of Rochester, supported by the Earl of Meath, who presided, the Rev. A. H. Fontaine, rector, and a large gathering. In declaring the space open for ever, the Bishop said there had been discussion about the propriety of turning consecrated ground into a place of recreation and pleasure. Yet whatever debate had taken place public conscience was perfectly satisfied. Let the highest and lowliest among them remember that they could not do anything higher and nobler than in softening the lot of indigent toilers. What could give greater pleasure in anticipation than the joy of the young and the quietude of the old in having such a beautiful place of recreation? The Metropolitan Public Gardens Association have laid the graveyard out, and St. Saviour's District Board of Works have undertaken to maintain it. Christ Church was founded in 1627. It was erected upon some part of the ancient Paris gardens, famous in their day for bear pits, and for a play-house associated with the stage authorship of Ben Jonson, Marston, and James Shirley.

Richmond Research Laboratories.—An influential deputation waited on Mr. Hanbury at the Treasury on Friday afternoon with reference to the proposal of the Government to erect a National Physical Laboratory in Old Deer Park, Richmond. The deputation represented a number of members of Parliament who are opposed to the proposal, the Corporation of Richmond, and the following societies: Commons and Footpaths Preservation Society, Kyrle Society, Metropolitan Public Gardens Association, National Trust, Selborne Society, Society for the Protection of Birds, and the Kent and Surrey Commons Preservation Committee. It was pointed out that a tacit understanding had always existed since George III. was permitted to close the public rights of way running through the park that the land should always remain unbuilt on. Objection was also taken to the scheme on the ground that the buildings would seriously impair one of the most beautiful views in the neighbourhood of London, and that it would also prevent any extension of Kew Gardens which might become necessary. The site selected for the laboratory almost adjoins the Queen's Cottage Grounds, which was presented by her Majesty to the nation on the occasion of her Diamond Jubilee. It was felt that the amenity of the land thus given to the public would be greatly injured if any building were erected in its immediate vicinity, and expression was also given to the fears of the societies that the many rare wild birds which frequent Old Deer Park would be driven away. Mr. Hanbury promised to carefully consider the views of the deputation.—("Morning Post.")

National Dahlia Society.—A committee meeting will be held on July 3rd, at 4 P.M., in the rooms of the Horticultural Club, at the Hotel Windsor, Victoria Street, Westminster (by kind permission of the members of the club). Agenda:—Election of judges, meeting on September 25th, and other business.

National Amateur Gardeners' Association.—This association will hold its summer display at Winchester House, Old Broad Street, E.C., on Tuesday evening, July 3rd, at seven o'clock. In connection with the exhibition, a conversazione has been arranged, under the patronage of the Lord Mayor of London. The honorary secretary is Mr. V. Stacy-Marks, 1, Anglesea Road, Surbiton, Surrey, who will give any information respecting the association.

National Carnation and Picotee Society.—The annual exhibition of this society will be held at the Crystal Palace, Sydenham, on Friday, July 20th. The Carnations and Picotees give promise of an exceptionally good bloom this season, and a very large display is anticipated. The schedule is a very liberal one, all classes of exhibitors being provided for, four silver cups and about £300 being offered in prizes. The hon. sec. is Mr. T. E. Henwood, 16, Hamilton Road, Reading, who will gladly answer any inquiries respecting the society.

Horticultural Club.—The last monthly dinner and conversazione for the session took place on Tuesday last, 19th inst.; the chair was occupied by Sir J. T. D. Llewelyn, Bt., M.P. The subject for discussion was the "Clematis," opened by a paper by Mr. A. G. Jackman, who was unfortunately not able to be present through indisposition, and the paper was read by Mr. George Bunyard, and an interesting discussion followed. There were present the Rev. W. Wilks, Messrs. H. Selge Leonard, Harry J. Veitch, S. A. de Graaff, P. R. Barr, R. C. Notcutt, R. Pinches, J. Assbee, G. Bunyard, and J. Walker.

Shirley Gardeners' Mutual Improvement Association.—The monthly meeting of the above society was held on the 18th inst. at the Parish Room, Shirley, Southampton, Mr. B. Ladhams, F.R.H.S., presiding over a fair attendance. The lecture for the evening was on "The Cultivation of the Pelargonium," by Mr. H. J. Jones, F.R.H.S., of the Ryecroft Nurseries, Lewisham. Mr. Jones gave an admirable description of the method of treating the Pelargonium. The show varieties of the plant were, he said, introduced in 1690, and though 200 years had elapsed, there was still to be traced a disposition to revert to the original type, the purple or lilac shade. He also gave some useful hints as applying to plants generally, such as get your plants dry when you cut them down. In potting, see that your soil is neither too wet nor too dry. Do not sift your soil through a sieve, as with rough compost the plants do better. In manuring, Give little and often is an excellent axiom, as if you give more than the plant can take it turns the soil sour and you speedily poison your plant. There was a good exhibition of plants, fruit, and flowers. Among the most noticeable were a grand display of hardy flowers from the nurseries of Mr. B. Ladhams of Shirley, containing as it did over 100 varieties, and it well deserved the society's award of merit given to this fine collection. Mr. J. Miles was awarded a certificate of merit for a fine dish of Strawberries, after which a hearty vote of thanks was accorded to Mr. Jones for his most practical and interesting lecture.—HARRY CURTIS, *Hon. Sec.*

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
June.										
Sunday.. 17	W.N.W.	deg. 63.0	deg. 56.9	deg. 71.9	deg. 59.6	ins. —	deg. 62.1	deg. 58.9	deg. 55.1	deg. 56.8
Monday.. 18	S.S.W.	64.2	56.0	71.9	46.7	—	62.0	59.1	55.1	36.9
Tuesday 19	S.S.W.	65.6	58.5	72.1	54.9	0.04	63.5	59.4	55.3	47.5
Wednesday 20	S.S.W.	61.6	56.8	69.9	54.3	0.16	63.9	59.9	55.5	50.2
Thursday 21	S.S.W.	58.9	54.9	60.2	51.1	0.33	62.9	60.2	55.7	44.3
Friday .. 22	W.N.W.	60.0	54.2	67.1	52.5	0.20	61.5	59.7	55.9	50.3
Saturday 23	W.N.W.	57.5	51.8	67.0	47.3	—	61.2	59.5	55.9	45.2
MEANS ..		61.5	55.6	68.6	52.3	Total 0.73	62.4	59.5	55.5	47.3

The weather has been mostly dull and showery during the past week, with strong winds and cool nights.

Irish Weather.—The weather for the current month has on the whole been fairly summerlike; some of the evenings have been cold, and we have had a thunderstorm followed by heavy rains, but the major portion has fallen during the night time. Our gardens are redolent in beauty, and Roses are abundant. Pæonies are superb, but unfortunately they are mainly the old crimson variety, instead of some of the newer and much improved types of more recent introduction.

Iris paradoxa.

ALTHOUGH this species has been in cultivation for a long period it is still rare, notwithstanding the fact that it is a showy and interesting plant. It belongs to the dwarf rhizomatous section, and in general appearance most closely resembles *I. iberica*. It is a native of the



FIG. 149.

IRIS PARADOXA.

Southern Caucasus. The rootstock is short and sturdy, producing usually from four to six short linear leaves, somewhat crowded. The flower scape is thrown up a little above the foliage, being 6 or 7 inches long. The flowers are large and showy, and vary in colour from very pale blue to purple, more or less streaked with lighter shades. The chief peculiarity of the flower lies in the contrast between the large and showy inner segments and the small inconspicuous outer ones, in this respect differing from most if not all other species. The flowering period is spring. It rejoices in a deep rich loam, but must be in a well drained situation. It should not be deeply planted, and must be placed in a bed of sand when first put out. A place in the rockery or at the foot of a warm wall, where it can be kept partially dry during winter, will suit it admirably. *Iris paradoxa* (fig. 149) was exhibited by Mr. Van Tubergen, Holland, at the meeting of the Royal Horticultural Society held on June 19th, when it was recommended for a first-class certificate by the Floral Committee.



Seedling Verbenas.

HAVING grown these plants on a small scale now for several years past with very gratifying results, I was therefore pleased to see "A. D. K.'s" favourable notice of these plants in last week's Journal. I feel sure they will be more used in future bedding arrangements than they are at the present time. A good strain of seedlings has all the charm and beauty of the named varieties of years gone by, with added vigour and apparently free from that dreaded pest, mildew. I well remember the named varieties that used to be grown, also the trouble and anxiety in getting together a sufficient stock for the required purposes. Then self-coloured ones, such as Purple King, Mrs. Holford, Crimson King, Lord Raglan and Defiance came to the front for distinct colouring, and for a time these held their own, but gradually had to give way to fashion. Then this useful plant eventually fell into disrepute, but, thanks to the perseverance of some of our seedsmen, who probably saw a future before it, and who took it in hand, we are now able, from a packet of seed sown in February, to have strong plants ready for planting at the usual bedding-out time, with the certainty of a profusion of bloom all through the summer season, many equalling and some even surpassing in beauty the original named varieties.—J. EASIER, *Nostell Priory Gardens*.

A Dearth of Peaches.

WHEN I penned my previous notes on this subject I was quite prepared to find it might seem strange reading to many gardeners, especially those who have at times surplus fruit to dispose of, as I know there is often a difficulty in disposing of them at good prices, simply because in districts where Peaches are largely grown the local fruiterers are sometimes overstocked. On the other hand, I have found that in cold localities near large towns Peaches are but little grown in the open air, and not very largely under glass. Shopkeepers have therefore to depend to a great extent upon the London salesmen for their supplies; and although the prices paid are good the grower does not reap the benefit, neither are the fruits so fresh as desirable by the time they reach the consumer. For these reasons I think that those who grow Peaches on a large scale should be in direct communication with shopkeepers in several large towns, and when once a connection of that description was formed they would have a regular outlet for some of their produce. Gardeners who have surplus fruit to dispose of could also adopt the same course, even though their supply was not a regular one. In such instances a "connecting link" seems to be required to put the parties in touch with each other. If any gardeners who have Peaches to dispose of will communicate with me I will put them in touch with a reliable fruiterer who can at all times take good fruit.—H. D., *Victoria Nurseries, West Humberstone, Leicester*.

Preventing the Onion Maggot.

THE suggested use of kerosene or paraffin oil, mixed with sand and strewn about amongst Onion plants to prevent attacks of the Onion fly on the young plants of spring sowings, is not new here, but all the same little is known as to its employment and effects. Practically, the maggot seems to have largely worked its own cure in dying out, for I find almost everywhere fine healthy beds of Onion plants where a few years since it was difficult to keep a plant alive. What is now the case with Onions is not less the case with Carrots, for only a year or two since these roots were destroyed wholesale in many directions. This year the breadths seem to be remarkably good and healthy. It does not follow therefore that when maggot is in evidence nothing to help destroy it should be done, but at least it is evident that there is less cause for worry over the appearance of these insect pests for a year or two than is usually believed.

The Celery and Parsnip leaf mining maggot sometimes is found everywhere doing great harm to these plants, at other times it is seldom seen, and where found easily kept in check. Even the caterpillars that infest Apple trees and Gooseberry bushes give trouble seldom, and may soon be dealt with, but there have been seasons when they have done enormous damage to these fruits. In all cases this year it seems probable that whilst somewhat abundant moisture will greatly assist root action and plant growth, it will also check the production of insect pests. So far as it is now possible to judge Onions and Carrots look remarkably well, and should exhibit very fine crops later. What is advised in America as to the employment of artificial manure dressings by first drawing the soil away from the rows of Onion plants before applying the manures could hardly be adopted in this country. Perhaps out there they allow very wide spaces between the rows, we seldom allow more room than 12 inches.—OBSERVER.

The Oak and the Ash.

OLD saws do indeed die hard; many a time have I heard the old rhyme about the Oak and the Ash. For thirty years I have watched these trees putting forth their leaves, with a view to proving the truth or otherwise of the saying. During the whole of the thirty years I do not remember one single season when the Oak was not out first. I need scarcely say that with trees raised from seed and in all sorts of soils and situations the date of the leaf expansion varies much, and it would be possible in most years to find an Ash in leaf and an Oak somewhere still naked, but taking the general run of trees I have always found the Oak first in the field. However, there is, I believe, a scientific body, which undertakes the recording of the blooming and leafing time of trees, and the secretary would doubtless be able to speak with authority upon this question.—A. H. PEARSON.

The Weather.

I TRUST that "S." has ere now had a share of the rain which seems to have fallen so generally all over the kingdom. He may well rejoice that none of those fierce thunderstorms which did so much harm in portions of Berks did visit Rood Ashton. I hear of one garden in which the huge hailstones destroyed every pane of glass in houses and frames, and in another in which a terrible swill washed 50 loads of gravel from out of a broad walk on to the grass. But the rains of last week were genial and general. Still, the product whilst promoting growth has been a great fall in temperature and a deficiency of sunshine, which is just now so much needed for the Strawberries, Peas, and hay. As a rule gardeners get their share of meteorological troubles, but I think the greatest of theirs can hardly excel that which befalls the farmer when he has a wet hay or corn harvest. Let us hope that we are not in for a wet summer, a grave misfortune to all.—A. D.

Poll or Proxy Voting.

IN speaking of the recently published proposed bye-laws of the Royal Horticultural Society little seems to have impressed itself upon Fellows so much as the suggestion to resuscitate proxy voting. The remarks respecting this are almost wholly condemnatory of the system as regards the R.H.S. and similarly constituted bodies. However, the matter will come on for decision in the course of the special general meeting to be held on Tuesday, July 3rd, in the Drill Hall. Though proxy voting with its many pitfalls may not meet with the favour of the Fellows, there can be little doubt that the present form of open voting is not entirely satisfactory. I would therefore like to bring forward the suggestion of a friend that under certain circumstances poll voting be adopted. As the present open voting stands, a majority of only one out of say a score present at a meeting may carry through the most important measures, and it is to avoid the dangers which may arise from this that poll voting is brought forward. I think it would be far more advantageous and favourable to the best interests of the society if the bye-laws empowered the Fellows to demand a poll where the majority voting in favour of a measure did not amount to two-thirds or more than that proportion of the total present at the meeting. This practice is adopted by many societies, and it is so reasonable and so obviously fair for all parties that it is worthy of the consideration as well of the Council as the Fellows of the Royal Horticultural Society.—F. R.

French Strawberries.

FROM what I have observed sold in the Birmingham market this season the supply of French imported Strawberries have, on the whole, proved superior to that of former years, more especially so far, at least, as appearance goes—a longstanding variety of a very pale and unattractive colour, as well as of inferior flavour, and which generally are packed in oblong boat-shaped boxes in pairs; and though English grown fruit has begun to come in plentifully recently—"Southamptons," to wit—the French supply continues unabated, and finds a ready sale. My principal object, however, in sending these notes is to ascertain the name of the variety in question. Earlier in the season there was also another French variety similarly packed, the berries being much smaller, suggestive of second crop fruit, but bright red in colour, and of fair flavour. The name of this variety, too, would be equally interesting to know. The varieties in question are the only ones I am cognisant of which come from France into the English market, and I have often wondered why far better varieties have not been so produced, and they would be certain of being appreciated accordingly here, and prove more profitable to the growers.

Regarding English produce a fair supply of Royal Sovereign from the Evesham district came into the market last week, the berries being very fine, but owing probably to the comparatively sunless weather, they were unusually acid in flavour, a remark which also applied to the Sir Joseph Paxton supply from Southampton, June 25th.—W. G.

Jottings on Pines.

THOUGH British Pine Apples are discounted by imported they still hold front rank as most ornamental—no fruit ornaments a dinner table so nobly—freshest, most tempting, and best in quality. Of course these matters depend upon the growth and finish, of which from time to time I propose to give brief explanatory details that may be of service to young gardeners, if not to old ones.

When the fruit commences to ripen syringing the plants must cease,

fruit is sufficiently advanced in ripening. The bottom heat should be maintained at 80° to 90°, but the more regular the heat at the roots the better.

The weather, though bright of late, is not yet such as to safely dispense with fire heat, but it will not be required much longer, as the sun heat assisted by that obtained from the fermenting beds rarely allows the atmospheric temperature to fall below 65°, which is more suitable for the satisfactory development of the plants than a higher temperature from fire heat. As recently potted plants make growth quickly, strict attention should be given to ventilation to prevent an attenuated growth, therefore admit air at 75° to 80°, increasing it until

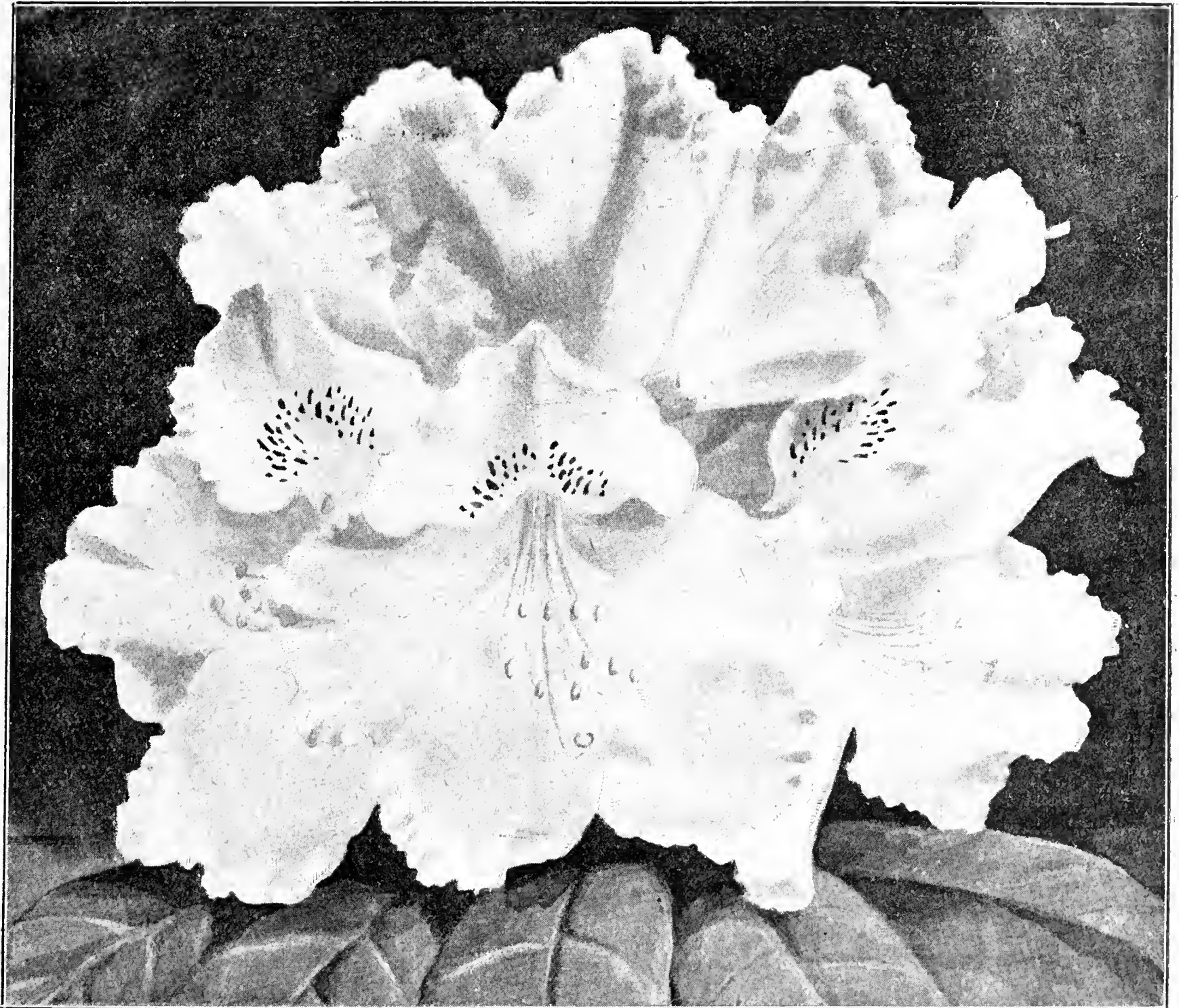


FIG. 150.—RHODODENDRON PINK PEARL. (See page 549).

but the supply of water at the roots should be continued as before when necessary, not being too liberal or the fruit may become black at the core. To improve the colour and quality of the fruit ventilate freely, still not allowing the temperature to fall below 80° in the daytime, gradually diminishing the moisture in the house. Plants of Queens, Enville, and Providence started into fruit last February will ripen this month, whilst Smooth Cayenne and Charlotte Rothschild will require a month longer to finish properly. Under the same conditions they furnish a good successional supply, which may be further extended by removing some of the fruiting plants to a cool airy house after the

85° is reached, and above that ventilate fully, diminishing in the afternoon, closing the house at a temperature of 80°. Afford a light sprinkling daily in the afternoon of bright days.

If a sufficient number of suckers on the early fruiting plants be now selected to meet the demand and started at once, the plants resulting will be suitable for fruiting another season from this time onwards, and prove supplementary to those started in March. The suckers require a low and moist pit, and the shading at this time of year must be effectual, gradually withdrawing it as the plants become rooted, this being indicated by starting into growth freely.—PRACTICE.



The Improvement in Sugar Beet.—It is a well-established fact, says an American writer, that plants can be improved by crossing and judicious selection quite as surely and effectively as the breeding of animals. The Sugar Beet may be quoted as an example of what cultivation may do. The Sugar Beet of to-day actually contains about three times as large a proportion of saccharine matter as it did a century ago.

The Value of Peat.—There will be joy in Ireland and Scotland over the news that comes from Vienna of the latest possibilities of peat. In the Vienna Exhibition of last year there was a building in which everything, from the carpets on the floor to the curtains on the windows and the paper on the walls, was all made from peat. That combustible is now made into fabrics which are said to have the toughness of linen with the warmth of wool, and blankets and other coverings made from it excel in warmth and cleanliness. We may soon look for thriving peat industries in the "congested" districts.

The Advantages of Ivy.—Many people refuse to have creepers of any description on the walls of their houses on the plea that they bring insects into the house. It is a distinct advantage, however, to live in a house with Ivy-covered walls, for the Ivy extracts for its own sustenance every particle of moisture from the brick or stone to which it clings, and thus keeps them free from damp. Then, too, when rain comes the leaves of the Ivy conduct the water from leaf to leaf until it reaches the ground, without the walls receiving any moisture whatever. Then, again, even the most prosaic person cannot but admit how much more picturesque and pleasant to the eyes is a house covered with Ivy than another with bare walls. Even the ugliest and most inartistic building can be made to look quite interesting if Ivy is allowed to find a place on its walls.

Soaking Seeds.—Soaking seeds in pure water has its disadvantages; it dissolves some substance from the seeds, which is brown in colour and gives off the smell of ammonia under heat, showing that nitrogenous matter, which Nature has stored there to nourish the young germ, has been soaked out. The plant grown from seeds soaked in plain water will be weaker and paler in colour than from seeds not so treated. Seeds soaked in water dry very quickly, and the evaporation leaves them drier than before; therefore such seeds frequently fail in a dry soil, or during a period of dry, warm weather. These evil results may be easily avoided by soaking seeds in a solution of some chemical salts of a fertilising nature. Such solution can dissolve little from the seed; on the contrary, it thoroughly impregnates them with fertilising ingredients, so that the young plants appear darker and decidedly stronger. Seeds so steeped always continue moist in consequence of the properties of the saline substance they contain.—("American Gardening.")

Burying Roots.—Ill-informed cultivators have only a faint idea of the reasons why trees should not be deeply planted. It is not because of any injury to the trunks, but because the feeding roots need the oxygen of the atmosphere in the preparation of the food, just as much as the leaves do. So far as the trunk is concerned, burying under the earth is a benefit rather than an injury. If it were possible to have the stems or trunks several feet beneath the surface, and the roots only a few inches, the vigour of the tree would be enhanced thereby. But though this is, says a transatlantic journal, impossible, earth on the surface can be heaped around the trunk to advantage, as long as we do not bury too great a root-feeding surface. This was well exemplified nearly half a century ago by a Peach grower, near Cincinnati, named Bolmar. He had earth by the cartload heaped around his Peach trees. His orchard had the appearance of being covered by miniature stacks. The growth and general health of the trees were remarkable. It was a grand object lesson, and he deserved some recompense. There can be no doubt but that it would be to the advantage of orchardists generally to have mounds of earth around the base of their fruit trees, and it is surprising that such good practice is so generally ignored.

Corsica's Pest of Locusts.—A telegram from Ajaccio states that locusts in enormous swarms have settled upon the district south-west of Bastia. The whole adult male population has turned out to defend the crops. More than 1000 persons are engaged in the struggle, but after three days of ceaseless destruction the invasion remains unchecked, and an appeal has been made for troops to continue the campaign. Had *Le Petit Caporal* been at his native place he would doubtless have preserved his country from such a calamity.

When to Work the Garden.—Cultivating and hoeing in the early morning when the dew is on the earth is far preferable, says an American writer, to doing it in the heat of the day. I arise at four o'clock and breakfast at six in the summer season. In the meantime I devote from one-half to two hours in the garden, hoeing, weeding, cultivating, and gathering cool, crisp Radishes, Lettuces, Peas, Beans, and Beet for the morning and noontime meals. Vegetables gathered when the dew is on them are of the finest quality. Early to bed, early to rise, gives a good appetite for breakfast, and adds days to our lives.

The Growing Interest in Forestry.—The interest manifested in forest matters in the East and Middle West within the last two years has been, says "American Gardening," productive of much agitation and legislation in a number of States. New York State is about to prepare working plans for its Adirondack possessions, while Pennsylvania has passed a forest reserve law and is purchasing land for reserve purposes. In Michigan an Act was passed providing for the creation of a permanent forest commission. Wisconsin also has been agitating forest matters to a great extent, and it is hoped that there will soon be an adequate law enacted for the improvement of forest conditions in that State. Minnesota has enacted a law for establishing forest reserves under a novel plan, from which good results are promised in that State, while in Indiana, North Carolina, Massachusetts, Connecticut, and other States, encouraging progress has been made in awakening general interest in the subject of forestry.

Primula mollis.—Introduced about fifty years ago it was then prophesied that this would be cultivated to a large extent for greenhouse work; that it has never found for itself the place in the affections of horticulturists that its introducers wished is very evident from the few places where it is successfully grown. Probably the reason it is not more frequently seen is that it often does not grow well as a pot plant and so disgusts the cultivator. It is, however, possible to grow it well in a cool house, and it then makes a striking object. A good plan is to raise seedlings in April, and when they have five or six leaves prick them out in a border of peat and loam or light sandy loam. After planting they should be given plenty of room with abundance of air and water until the end of October, when they should be kept on the dry side until growth recommences in spring. When growth is active plenty of water must be given. Under these conditions it is possible to grow plants 18 inches across, with leaves 5 inches in diameter and flower spikes 15 inches high, bearing five or six whorls of rosy purple flowers. If when planted they can be so placed as to be partially shaded by some taller plant, so much the better.—KEWITE.

Reasoning Power of Plants.—Do plants reason? This seems a strange question, but it is asked by the daughter of a prominent Mexican planter who has been making a series of experiments, and publishing the results in a Mexican newspaper. Among the many experiments made by this young lady naturalist of Mexico, the most suggestive was with a Morning Glory plant. This young lady drove a nail in the wall some distance from the tendril of a Morning Glory plant. The tendril at once began to grow toward the nail. The nail was shifted; the tendril shifted its course. Five times the nail was shifted, and five times the tendril shifted its course. Finally a cord was hung up to tempt the tendril, and it shifted its course toward the cord and left the nail which it had five times persisted in following. The young lady asks: How did the plant know that the nail was there? And how did it know that the nail was shifted? When the cord was stretched at an equal distance away, how did it know the difference between the cord and the nail? She also asks: Why do the tendrils of the Morning Glory prefer a cord or continuous support, such as a cord, wire, or lath, or rail, rather than a peg or nail, which does not give this continuous support? Why, when presented with an equal choice between the two, will they invariably choose the continuous support? After asking a series of questions logically springing from the facts cited and others, she concludes by asserting that plants really reason.—("Indian Gardening.")

Calochortus Benthami.

AMONGST the showiest of our smaller growing garden plants must be included the Calochorti, of which we have many very beautiful species and varieties. *C. Benthami* (fig. 151) is a beautiful little Californian bulbous plant, and it is somewhat nearly related to *C. pulchellus*. It is, however, distinguished by its bright yellow flowers, on the surface of the divisions of which are thickly clustered a number of short yellow hairs. It is very dwarf, seldom exceeding 8 inches in height, but is free both in flowering and growth. It is particularly well adapted for growing in pots, and with the protection of a cool frame develops its flowers early in the year, and is much better than when grown in the open border. A charming companion for *C. Benthami* is *C. Maweanus*, which has bluish purple flowers of about the same size as the first named, and similar in habit. This is, however, found near the coast, and in the neighbourhood of San Francisco.

Royal Horticultural Society.

Richmond, June 27th and 28th.

THE exhibition held in conjunction with the Richmond Horticultural Society proved to be worthy of the best traditions of the society. The plants and hardy flowers naturally contribute most, and although the fruit and vegetables were confined to a few exhibits, they were good in their respective classes. The Orchids made a poor show, for the customary exhibitors had staged elsewhere in the other tents.

Fruit Committee.

Present: H. Balderson, Esq. (in the chair); and Messrs. G. Woodward, J. Willard, John Basham, Jas. Smith, Rev. W. Wilks, S. Mortimer, Alex. Dean, Geo. Wythes, H. Esling, A. F. Barron, H. S. Rivers, W. Poupart, Wm. Pope, Geo. Kelf, M. Gleeson, W. Iggulden, J. Cheal, Jas. H. Veitch, and W. Crump.

From Messrs. Suttons & Sons, Reading, came a huge exhibit of Tomatoes in pots, while Gloxinias in variety occupied the rest of the tables; the latter were most tastefully arranged in Maidenhair Ferns, *Ficus repens*, and *Isolepis gracilis*. The Tomatoes were roped with fruit, and included capital samples of Sutton's Al, Tender and True, Sunbeam, Peerless, Winter Beauty, in grand form; Eclipse, Maincrop, and Princess of Wales. The Gloxinias were large, bright in colour, and well flowered (silver Knightian medal). Mr. E. Beckett, gardener to Lord Aldenham, Elstree, exhibited a collection of fifty-five varieties of vegetables, which made a noble show in themselves. The varieties were all good and well grown, those that struck one as being most superior were dishes of Tomatoes Perfection, Sunbeam, Duke of York, Polegate, and Golden Jubilee; Vegetable Marrows Pen-y-byd, Moore's Cream, and Selected White; Beet Crimson Ball; Carrots Scarlet Model, a fine exhibit, and Matchless Scarlet; Potatoes Snowdrop and Sharpe's Victor; Peas Edwin Beckett, a seedling with long dark green pods, Daisy, and Early Morn. Cauliflower Walcheren were splendidly staged, while Cucumber Ideal, French Beans Canadian Wonder and Cabbages Ellam's were all capital so early in the season (gold medal).

Mr. H. Walters, gardener to Lord Gerard, exhibited a collection of Melons, comprising about forty fruits. The varieties were British Queen, Countess, Royal Jubilee, Frogmore Seedling, Hero of Lockinge, a new variety, Eastwell Park, and Scarlet Premier (silver Banksian medal). Messrs. Sutton & Sons staged a new Tomato, Lord Kitchener, a good smooth variety of good colour, and evidently a free setter. Mr. E. Beckett staged a box of Cucumber Ideal, which contained good representative fruits; the variety was granted an award of merit earlier in the season.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. G. Paul, J. Hudson, H. J. Cutbush, W. Bain, C. Blick, W. Howe, C. E. Shea, E. H. Jenkins, H. S. Leonard, T. W. Sanders, R. Dean, H. B. May, J. D. Pawle, J. Jennings, G. W. Miles, C. E. Pearson, J. H. Fitt, Chas. Jefferies, J. Fraser, W. J. James, C. J. Salter, J. F. McLeod, C. T. Drury, and C. R. Fielder.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, arranged a grand group of Roses in pots, backed with *Lilium Harrisii*, Palms, and Bambusas. The Roses were just in the pink of condition, and included beautiful examples of the Rev. Alan Cheales, Gloire Lyonnaise, La France, Margaret Dickson, Mrs. R. G. S. Crawford, Helen Keller, Prince Camille de Rohan, and Duke of Teck. The flatness was relieved with plants of Electra, the new yellow garden Rose, which were well flowered and effective (gold medal.) A fine bank of hardy flowers were staged by Messrs. Barr & Sons, Covent Garden, which included a good collection

of Pæonies, such as Lord Salisbury, Leonie, Faust, and Maréchal MacMahon. A collection of English Irises was particularly attractive, while Potentillas, Gaillardias, *Heuchera sanguinea*, and *Ixias*, with a variety of other plants contributed to an excellent display (silver Banksian medal). A pleasing arrangement of hardy ornamental shrubs and trees was contributed by Mr. John Russell, Richmond. The colours of the Acers, Ivies, Beeches, and a number of other plants assisted in making an interesting exhibit (silver Banksian medal.)

Messrs. Peed & Son, West Norwood, had a somewhat formal group of Caladiums, for although rather crowded the plants were well grown and the colours most vivid. The chief varieties were Rio de Janeiro, Fastuosum, Her Majesty, and Mrs. John Peed. The groundwork of Maidenhair Ferns were most pleasing. The same firm also contributed a collection of Carnations, which included groups of Princess of Wales, R. H. Measures, Lady Grimston, Mephisto, and Hayes' Scarlet; also a collection of Gloxinias (silver-gilt Banksian medal). Mr. Jas. Hudson,



FIG. 151.—CALOCHORTUS BENTHAMII.

gardener to L. de Rothschild, Esq., Gunnersbury House, exhibited Water Lilies in a most effective manner; in fact, it is undoubtedly Mr. J. Hudson's best effort in this respect. The tubs were surrounded by Water Reeds, Grasses, bracken, and a few clumps of Forget-me-not. *Nymphaea stellata* was covered with open flowers, while *N. marliacea chromatella*, *N. m. rosea*, *N. Robinsoni*, and *N. Laydekeri*, a very natural exhibit (silver-gilt Banksian medal). Gloxinias and Petunias came from Messrs. J. Carter & Co., High Holborn. The double Petunias were full of bloom, and included a good variety of colours, while the Gloxinias comprised a fine strain, the spotted varieties being especially bright and effective. The whole exhibit was arranged with Palms, Lilliums, Maidenhair Ferns, and other foliage plants.

A large expanse of tabling was covered by Messrs. Kelway & Sons, Langport, with Delphiniums, Pæonies, Gaillardias, and a variety of other hardy flowers. The best Delphiniums were Maghull, King of Delphiniums, Albert Edward, Mary Morison, and Dagonet. The most conspicuous Pæonies were Prince of Wales, Baroness Schröder, Lord Cromer, and Duke of Cambridge. Other notable subjects were *Allium glaucum*, *Campanulas persicifolia*, *grandiflora*, and the white variety (silver Flora medal). Messrs. W. Cutbush & Son, Highgate, arranged

a grand group of flowering and foliage plants, somewhat after the style adopted at the Temple Show, and it was quite as effective. The groups of Carnations, with others of *Hydrangea paniculata*, Oranges, Ericas, and miscellaneous plants, with groups of foliage plants arranged in beds of Ferns, *Dracænas*, and other ornamental plants, completed an imposing display (silver-gilt Flora medal). Mr. W. J. Jones, Lewisham, staged a large table of cut Sweet Peas, Zonal Pelargoniums, with a few hardy flowers. The whole table was bright, yet light in arrangement; the Sweet Peas, staged with their own foliage, being especially attractive.

Messrs. G. Jackman & Son, Woking, also contributed hardy flowers in variety, Carnations and Pinks, but the chief feature was undoubtedly the collection of Roses. Those staged in the orthodox style in boxes were clear and fresh looking, while the garden Roses and Penzance Briars were greatly admired, as were also the hybrid Clematises (silver Flora medal). Ferns from Messrs. J. Hill & Son, Edmonton, occupied a table running the greater part of the tent, and the exhibit was a worthy one in every way. The specimens included *Davallia Mooreana*, *Pteris scaberula*, *Platynerium alcinorne*, *Asplenium nidus*, *Cibotium Schiedeii* and *Davallia dissecta*. The smaller plants were all beautifully developed, and included a number of tinted forms so arranged that their beauty could be seen (gold medal). A gorgeous display of hardy flowers was arranged by Messrs. Jas. Veitch & Sons, Ltd., Chelsea. The Irises and Pæonies were especially effective, while *Kalanchoe flammea*, *Rhododendron* hybrids, and *Delphiniums* were notable.

Mr. J. F. McLeod, gardener to J. P. Morgan, Esq., Dover House, Roehampton, contributed a fine group of flowering and foliage plants, tastefully arranged with Ferns, Crotons, Palms, and *Dracænas*. The chief flowering plants were a fine group of Malmaison Carnations, *Lilium Harrisii*, with smaller groups of *Crassulas*, *Clerodendron fallax*, *Statice*, and double *Begonias* completed a splendid exhibit (silver-gilt Flora medal). Mr. W. Poupart, Marsh Farm, Twickenham, staged some typical market produce. The Early London Cauliflower, Polley's Nonesuch Turnips, French Horn Carrots, and dark green Paris Cos Lettuce were excellent.

Large collections of cut and clipped trees with Ivies were arranged by Messrs. W. Cutbush & Son. Mr. J. Buckham, Twickenham, also had clipped Bays, variegated Acers, and Privets as specimen plants, while Messrs. Jas. Veitch & Sons, Ltd., sent an unique collection of Ivies in pots arranged on wire trellis, so that their natural habit could be seen.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); and Messrs. W. H. White, E. Hill, De B. Crawshaw, H. Little, H. A. Tracey, H. J. Chapman, J. O'Brien, H. T. Pitt, and W. H. Young.

Orchids were conspicuous almost by their absence. Mr. H. Tracey, Twickenham, exhibited a good plant of *Cattleya Mendeli albens*, variety Princess of Wales, also a plant of C. M. variety La Belle, a grand form with a parti-coloured lip, the upper portion being creamy white, while the lower part was bright rosy purple. Two *Odontoglossums* were staged by Mrs. Briggs-Bury, Bank House, Accrington, both of which were honoured by the committee, one with a first-class certificate and the other an award of merit.

Certificates and Awards of Merit.

Cattleya Mendeli albens variety Princess of Wales (H. A. Tracey).—A charming variety, with just a tinge of colour at the base of the upper petals, while the base of the lip is shaded yellow (first-class certificate).

Croton Venus (Green, Ltd.).—A narrow leaved variety, yellow, with a little green in colour, and the leaves beautifully curled (award of merit).

Delphinium Sir George Newnes (Kelway & Son).—A deep royal blue, double (award of merit).

Iris Monnieri (Barr & Sons).—This is a handsome Iris with yellow flowers (award of merit).

Nymphaea gigantea (J. Hudson).—A lovely Australian species. The flowers are large, a deep heliotrope colour, approaching blue. A handsome flower (first-class certificate).

Odontoglossum crispum Duchess of Connaught (Mrs. Briggs-Bury).—Flower of medium size heavily marked with cinnamon brown, the lower petals being deeply marked (first-class certificate).

Odontoglossum crispum Empress of India (Mrs. Briggs-Bury).—A variety heavily blotched with purplish-brown, the marking being well defined (award of merit).

Roof Gardens in the City.—It is not often that plants are moved in any wholesale fashion from the smoke and dirt of London to a pure fresh country garden, but such a thing has just happened at London Wall, says the "City Press." A resident, who has been dispossessed by the improvements in that district, while living in London Wall, took a great pride in his roof garden, and year by year possessed a fine show of flowers and plants that flourished in spite of the smoke. These treasures he has moved to the real garden he now possesses, and they serve, as he says, to remind him of the old home, of which he still entertains fond memories.

National Rose Society.

Salisbury, June 27th.

THE southern exhibition of the National Rose Society, which was held in connection with the Wilts Horticultural Society on Wednesday, was a variable one in respect of the quality of the flowers. Some of the examples were of exceptional excellence, while others were decidedly rough; needless to say practically the whole of them showed the effects of the unfavourable weather that we have experienced during the past season. This was of course answerable for the poorness of the competition in the majority of classes. The local exhibition was comparatively small, the best feature being the group of Malmaison Carnations from the Earl of Radnor, at Longford Castle.

Nurserymen's Classes.

The principal class in this section was that for forty-eight blooms, distinct varieties, and the premier position was adjudged to Messrs. A. Dickson & Sons, Newtownards, who staged an excellent box. The varieties comprised Margaret Dickson, Marchioness of Dufferin, Bessie Brown, Ulster, Rubens, Gustave Piganeau, Lady Mary Fitzwilliam, Abel Carrière, Mrs. R. G. Sharman Crawford, Marquise Litta, Mildred Grant, Alphonse Souper, Maman Cochet, Mrs. John Laing, Medea, Lady Moyra Beauclerc, Tom Wood, Deegan's White, Mrs. W. J. Grant, Florence Pemberton, Duke of Teck, Souvenir d'un Ami, A. K. Williams, Alice Lindsell, Marie Verdier, Caroline Testout, Maman Cochet, Madame Hoste, Mrs. Mawley, Souvenir de S. A. Prince, Sheila, Lady Clanmorris, The Bride, La France, Comtesse de Panisse, Marchioness of Downshire, Dupuy Jamain, Hon. Edith Gifford, Helen Keller, Catherine Mermet, Duke of Edinburgh, Marchioness of Londonderry, Mrs. Conway Jones, Souvenir de President Carnot, Gladys Harkness, Maréchal Niel, and Muriel Grahame. Messrs. F. Cant & Co. were second; and Messrs. D. Prior & Son third. There were three competitors.

In the class for twenty-four distinct varieties the prizewinners were Messrs. G. Prince, J. Burrell & Co., and Curtis, Sanford & Co., Torquay, in the order in which the names are here given. The first prize stand contained Comtesse de Nadaillac, The Bride, Mrs. W. J. Grant, Maréchal Niel, Gustave Piganeau, Souvenir de S. A. Prince, Prince Camille de Rohan, Medea, Cleopatra, Souvenir d'un Ami, Rubens, Captain Hayward, Souvenir d'Elise Vardon, Auguste Rigotard, Princess of Wales, Catherine Mermet, Exposition de Brie, Amazone, Lady Mary Fitzwilliam, Kaiserin Augusta Victoria, Marie Van Houtte, Dupuy Jamain, and Innocente Pirola. The second prize box was exceptionally close.

There were four competitors in the class for twenty-four distinct varieties, three blooms of each, and Messrs. A. Dickson & Sons were placed first. The best varieties were Jean Ducher, Madame Cusin, Margaret Dickson, Catherine Mermet, Mrs. W. J. Grant, Mildred Grant, Mrs. Conway Jones, The Bride, Comtesse de Nadaillac, and Tom Hood. Messrs. F. Cant & Co. were second, and Messrs. D. Prior and Son third, both showing blooms touched by the weather. For twelve blooms of any Rose except a Tea or Noisette Messrs. A. Dickson and Sons were first with Ulster in fine form, Messrs. F. Cant & Co. second with Mrs. W. J. Grant in beautiful colour, and Messrs. D. Prior and Son third with the same variety.

The chief class in the Tea or Noisette section was that for twenty-four blooms, distinct varieties. Mr. Geo. Prince, Oxford, was a decided first with Comtesse de Nadaillac, The Bride, Cleopatra, Marie Van Houtte, Maman Cochet, Jean Ducher, Bridesmaid, Maréchal Niel, Niphotos, Souvenir d'un Ami, M. Furtado, Rubens, Medea, Souvenir d'Elise Vardon, Princess of Wales, Souvenir de S. A. Prince, Princess Beatrice, Alba Rosea, Madame Cusin, La Boule d'Or, Innocente Pirola, Anna Olivier, Cornelia Koch, and Golden Gate. Messrs. F. Cant & Co., Colchester, were second; and Messrs. D. Prior & Son third.

The premier award for twelve Teas or Noisettes was secured by Mr. John Mattock, New Headington, Oxford, with a charming box of Ernest Metz, Niphotos, Souvenir d'un Ami, Souvenir d'Elise, Princess Beatrice, Rubens, Princess of Wales, Catherine Mermet, Cornelia Koch, Comtesse de Nadaillac, and The Bride. Messrs. J. Burrell & Co., Cambridge, were second, and Messrs. J. Townsend & Son, Worcester, third. In the class for thirty-six distinct varieties of garden or decorative Roses, not less than three trusses of each, a space of 10 feet by 3 feet was allowed, and there were two exhibitors. Messrs. Paul and Son, Cheshunt, were in the first place with a superb stand. Very conspicuous were Carmine Pillar, Wm. Allan Richardson, Marquise de Salisbury, Gustave Regis, Camoens, L'Ideale, Papa Gontier, and Aglaia. Messrs. G. Cooling & Sons, Bath, were second.

Mr. Charles Turner, Slough, received the premier prize in the class for eighteen garden or decorative Roses with some magnificent bunches, Mr. G. Prince was second, and Mr. J. Mattock third.

Open Classes.

Messrs. A. Dickson & Sons received a gold medal for Alice Lindsell, a Hybrid Tea that promises to be a superb flower. The colour is cream rose. Mr. G. Prince received a card of commendation for a single Rose Bellefleur. The colour is rich carmine scarlet. The first prize in this division for twelve distinct Teas or Noisettes, three blooms of each, was annexed by Messrs. F. Cant & Co., who staged Rubens, Madame de Watteville, Maman Cochet, Souvenir d'Elise Vardon, Madame Cusin,

and The Bride as the best. Messrs. D. Prior & Son were second. For twelve blooms of any Tea or Noisette Rose, Messrs. A. Dickson & Sons were first with Mrs. Edward Mawley in grand condition. Messrs. D. Prior & Son were second with Marie Van Houtte, and Messrs. F. Cant and Co. third with the same variety.

Messrs. G. Cooling & Sons were first for twelve distinct varieties of single Roses with a beautiful exhibit, comprising Yellow Austrian Brier, Rugosa, Rugosa alba, Paul's Single White, Copper Austrian Brier, and Macrantha as the best. Mr. Chas. Turner was second, and Messrs. Paul & Son third. The class for twelve bunches of Sweetbrier Roses brought forth two exhibitors, Messrs. G. Cooling & Sons and Messrs. F. Cant & Co., who secured the prizes as named. Some of the varieties were very beautiful.

Amateurs' Classes.

The premier prize in an extra class, open to all amateurs, for twelve distinct single trusses, consisted of a gold medal and £3, and the position was secured by the Rev. J. H. Pemberton, Havering-atte-Bower. The varieties were Ulrich Brunner, Caroline Testout, Captain Hayward, Mrs. W. J. Grant, Maman Cochet, Duke of Edinburgh, Comtesse de Nadaillac, A. K. Williams, Comtesse de Ludre, Maréchal Niel, Mrs. Sharman Crawford, and The Bride. Mr. A. Hill Gray, Newbridge, Bath, had a neat box with Maman Cochet, Princess of Wales, Madame Cusin, and Maréchal Niel as the best blooms. The Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, was third.

For twenty-four distinct trusses open to all amateurs there was only one competitor. This was the Rev. J. H. Pemberton, and he received the premier award. The blooms were as a whole good, but they showed some traces of the weather. The varieties were Marquise Litta, Madame Joseph Bonnaire, Général Jacqueminot, La France, Capt. Hayward, Caroline Testout, Gustave Piganeau, Mrs. John Laing, Mrs. Sharman Crawford, Duke of Wellington, Maman Cochet, Duchess of Bedford, Mrs. W. J. Grant, François Michelon, Heinrich Schultheis, Chas. Lefebvre, Le Havre, Marchioness of Dufferin, Ulrich Brunner, Jeanie Dickson, A. K. Williams, Marie Van Houtte, Souvenir d'un Ami and Kaiserin Augusta Victoria.

Competitors in the preceding class were eligible to enter that for six distinct trebles, and the leading position was again taken by the Rev. J. H. Pemberton, who staged La France, Maman Cochet, A. K. Williams, Comtesse de Nadaillac, Caroline Testout, and Mrs. W. J. Grant. Mr. G. W. Cook, The Briars, North Finchley, was the only exhibitor in the class for twelve distinct single trusses, open only to growers of less than 1000 plants. The first prize was awarded for neat, clean, but rather small flowers.

For growers of less than 500 plants there was a class for six distinct single trusses, and the first prize was won by Mr. R. W. Bowyer, Haileybury College, Hertford, with a fair box. Mr. F. R. Smith, Melford Lodge, Muswell Hill, was second, and Mr. S. Smith, Warminster, third. An extra class, open only to those in the two just referred to, was for four trebles, distinct. Mr. G. W. Cook was the only exhibitor, and received the premier award with Captain Hayward, Lady Mary Fitzwilliam, Kaiserin Augusta Victoria, and Mrs. W. J. Grant. For six blooms of any Rose other than a Tea or Noisette, open to all amateurs, the Rev. J. H. Pemberton was first with Caroline Testout.

The Prince Memorial cup for eighteen distinct Teas or Noisettes, open to all amateurs, was secured by Mr. A. Hill Gray with Maréchal Niel, Cleopatra, Maman Cochet, Hon. Edith Gifford, Comtesse de Nadaillac, Souvenir d'un Ami, The Bride, Bridesmaid, Princess Beatrice, Madame Cusin, Medea, Souvenir d'Elise Vardon, Princess of Wales, White Maman Cochet, Catherine Mermet, Muriel Grahame, Golden Gate, and Comtesse Panisse. The blooms were superb. The second position was taken by the Rev. A. Foster Melliar.

For twelve distinct single trusses open to growers of less than 500 Teas or Noisettes, the first prize was taken by the Rev. J. H. Pemberton, with Madame Cusin, Souvenir d'un Ami, Comtesse de Nadaillac, Maman Cochet, The Bride, Catherine Mermet, Maréchal Niel, Muriel Grahame, Madame Hoste, Golden Gate, Bridesmaid, and Marie Van Houtte. In the class for six Teas or Noisettes distinct (open to growers of less than 200 plants), Mr. R. W. Bowyer was first and Mr. E. R. Smith second.

For six Teas or Noisettes trebles, open to all amateurs, the prize-winner was Mr. A. Hill Gray. In the open to all amateurs class for six blooms of any Tea or Noisette Mr. A. Hill Gray was first with The Bride, and Mr. S. Smith second with Maréchal Niel. For twelve distinct garden or decorative Roses the Rev. J. H. Pemberton was first with some splendid bunches. For six distinct garden or decorative Roses Mr. Edward Mawley was easily first, and Mr. S. Smith second.

Premier Blooms.

The silver medal Roses in the amateurs' section were:—For the best Tea or Noisette, Maman Cochet, from Mr. A. Hill Gray; for the best Hybrid Tea, La France, from the Rev. A. Foster Melliar; and for the best Hybrid Perpetual, Mrs. R. G. Sharman Crawford, from the Rev. J. H. Pemberton. In the nurserymen's section the best Tea or Noisette was Comtesse de Nadaillac from Mr. Geo. Prince; the best Hybrid Tea, Lady Mary Fitzwilliam, from Messrs. D. Prior & Son; and the best Hybrid Perpetual, Duchess of Bedford, from Messrs. Burrell & Co.

Vignettes of the Veldt.

IN one of his recent war letters to the "Morning Post" Mr. H. F. Prevost Battersby says under this title, "The veldt is a queer country, and only those who have ridden across the sameness of its unchanging miles can claim to know much about it. Yet it has its beauties also, which appear as unexpectedly in the folds of its brown downs as the vivid scarlet petals or pale stars of lemon and heliotrope which grow at wide intervals amid their grasses. One such farm there was on the way to Welgelegen. Four hundred yards to the westward it might have been passed unseen, and even seen across the roll there was but a thin trickle of green where the stream crept down a cleft of the upland, and a green pool of trees about a white-washed house. Yet the dark branches of that pool bore Citrons and Oranges, crimson Pomegranates and purple Figs, and beneath them was a tangle of trailing Roses, great red Hybrids and filmy Briars, with the cream-pink petals and tender yellows of scented Teas. And beside the careless garden walks, under the globes of golden fruit, were flaming Salvias, sulphur spears of Hollyhocks, the dusky copper of great Chrysanthemums, the garnet and white of honey-scented Scabious, and beds of broken purples and gentian blue. One passed from the wide seclusion of the wilderness through the dark grove of Citron and Pomegranate into this sanctuary of flowers. And closer though the seclusion grew, the waste was silent, but the garden sang, filled with the cooing of turtle doves and the bills and fluttering wings of birds."



Fruit Forcing.

Vines.—*In Pots for Early Forcing.*—Stop the canes when from 6 to 8 feet long, pinching the laterals and sub-laterals to one joint as produced. Supply water and liquid manure at the roots as required, and see that the foliage is kept clean by judicious syringing, admitting air rather freely in the early part of the day, as this will favour elaboration and the storing of assimilated matter.

Vines Cleared of Grapes.—Syringe occasionally to keep down red spider, thrips, and similar pests. Afford liquid manure if the Vines are weakly, or water to keep the soil moist. A light mulching of short spent manure will prevent the surface cracking, and the moist surface and nourishment will attract the roots to the surface. Allow a moderate extension of the laterals, and admit air freely above 60°. There is no danger of the wood not ripening; the difficulty is to prevent the ripening and premature fall of the foliage.

Houses of Ripe Grapes.—A good spread of foliage over black Hamburghs and other black Grapes will assist in keeping their colour. Indeed, all ripe Grapes are better for a slight shade from powerful sun. A single thickness of pilchard, or double thickness of herring nets drawn over the roof-lights will mostly be sufficient shade. Moderate moisture will not injure the Grapes if accompanied by free ventilation. Keep laterals fairly under, but a little extension will assist in the retention of the principal leaves, and on their continuance in health depends the maturity of the buds for next year's crop.

Grapes Ripening.—When the berries commence changing colour admit a little air constantly, with sufficient heat in the pipes to maintain a night temperature of 65° and 70° to 75° by day, with 80° to 85° or 90° from sun heat. Avoid an arid atmosphere, damping occasionally, and do not allow the border to become dry. Vines ripening heavy crops will be assisted in perfecting them and storing food for the future by an application of liquid manure occasionally, or a top-dressing of some approved fertiliser washed in, operating in the morning, and choosing a fine day, so that superabundant moisture will be dispersed before evening. A light mulching of dry spent material will assist the Vines by securing uniform moisture and keeping the roots near the surface whilst avoiding excess of moisture, and thus preventing cracking. It is a confined atmosphere that does much of the mischief in Grapes spotting and cracking, therefore leave a little air on constantly and increase it early in the day.

Late Grapes.—Do not delay the thinning of the bunches and berries; overcropping is fatal to perfect finish. Burdening a Vine with more Grapes than it can swell well and evenly is to cause it to ripen the fruit later, and leave doubts as to the berries colouring and having that amount of saccharine matter stored in them which secures their sound keeping. Thin well to secure large and highly finished berries, leaving those of the large-berried varieties about an inch apart, the oval kinds not requiring so much room as the round ones, but all should be thinned.

so that they will have space for swelling without wedging when of full size, and yet be so close that when dished they will retain their form. Loose bunches that show the footstalks are not so pleasing, however fine the berries, as those more compact. Shy-setting varieties are often thin of berries through the number of stoneless ones that must be removed, to guard against which no pains should be spared in getting the wood ripe and in fertilising the bunches when in flower with Black Hamburgh pollen or that of other free-setting sorts. A pound of Grapes per foot run of rod is usually as many as most Vines can finish well.

Regulating the Growths.—Allow all foliage to remain that can have full exposure to light, but when the space is fairly covered with leaves keep the shoots closely pinched. An excess of foliage is not good, though it is often encouraged with a view to root action, but it is elaborated juices that build up the structures of the Vine, the crop of the current year, and the wood and buds that give the fruit of the next. The foliage should be rather thinner in the case of white Grapes than in black. This more particularly applies to Muscats, which of all Grapes require high elaboration of the sap to insure their assuming the rich golden amber so much prized. Avoid large reductions of foliage at a time; it only tends to induce shanking through the check given to the roots.

Keep the growths tied down from the glass, and so prevent scorching. Vines extending must be allowed to make as much lateral growth as practicable, always bearing in mind the wood on which the fruit is to be borne next season must have full exposure for its foliage, as it is the principal leaves that elaborate the sap and transmit the assimilated matter that forms the buds at the base. The laterals from these having been stopped at the first joint, may be allowed to extend afterwards, subject to their not interfering with the access of light to the main leaves.

Temperature and Ventilation.—All late Grapes thrive best in a high temperature, with abundant food at the roots and a genial atmosphere. Fires should be employed to maintain a night temperature of 60° to 65°, and 70° to 75° in dull weather by day. Admit air early, allowing a little ventilation at the top of the house constantly, increasing the ventilation with the temperature. Advance to 85° or 90° with sun heat, at which keep through the day by that means, reducing the ventilation with the declining sun. Close at 85°, damping the paths well, then again before nightfall. It is well to close for a short time, and afterwards admit a little air, which will prevent a vitiated atmosphere. Make the most of sun heat for late Grapes by judicious ventilation, aiding with artificial heat so as to keep them in steady progress; avoid cold draughts or sudden depressions of temperature, as these cause rust and favour the spread of mildew and other pests.

The Kitchen Garden.

Asparagus.—Peas are late this season, and not till they are fairly plentiful is it possible to wholly cease cutting Asparagus. It should, however, be remembered that a strong early top growth is imperative if extra stout shoots are desired next spring; a very good reason why there ought to be no undue delay in ceasing to cut. In hot, dry positions it pays well to give the beds an occasional soaking of liquid manure, or to water in a light surfacing of guano or some other soluble manure. A mulching of strawy manure is also beneficial.

Broccoli.—Only sturdy, short-stemmed plants will survive a moderately severe winter, and these may be grown without any great difficulty. A bad start is made when the plants are raised thickly in seed beds and left in these till they have become leggy and weakly. They ought to be got out early on firm, moderately rich ground. The autumn varieties may be planted between rows of early Potatoes disposed 3 feet apart. The later varieties should be planted 30 inches asunder in the open on ground made firm by trampling.

Borecole and Brussels Sprouts.—These important crops should have a rather long period of growth. They may be planted between rows of early short-topped Potatoes soon after these have been finally moulded up. Those previously pricked out in nursery beds ought to be watered, and a little later transplanted, each with a ball of soil about the roots. Plants in seed beds should be watered, after which they may be lifted and replanted with a dibber. Water immediately after planting, and occasionally till growing strongly. Those on specially prepared ground may be 2 feet apart in rows not less than 30 inches asunder. Seeds of Asparagus or Buda Kale may yet be sown thinly in drills 2 feet apart, and if only slightly thinned a heavy crop of greens will probably be available next spring.

Cauliflowers.—These have not been an unqualified success this season. The smaller hearts may be considerably increased in size if the plants receive abundance of liquid manure. Later breadths of the Autumn Giant planted on moderately rich ground may be found of good service in October and November; also for storing in pits and frames.

Runner Beans.—The seeds of these having germinated evenly there are many more plants than ought to be left; crowded plants are the first to fail in a dry hot season. Thin out to a distance of 1 foot apart, one plant to each stake being ample. Those to be grown without stakes must be kept closely topped.



Book on Orchid Culture (J. C. S.).—The book to which we made reference was Burberry's "Orchid Growing for Amateurs," published by Messrs. Blake & MacKenzie, Liverpool. You will find it most useful as an aid to the culture of small collections.

Apple Trees not Bearing (J. W.).—The growths are weak, and the blossoms, or remains of them, too feeble to produce good fruit even if setting. Neither the foliage nor the flowers appear injured, and there is no evidence of disease. As there may be mildew we should add a little flowers of sulphur to the water used in syringing the trees, first moistening it or forming it into a paste with skim milk, then place about a tablespoonful of the paste in a pailful (3 gallons) of water. To invigorate the trees supply at once a top-dressing of the following mixture:—Bone superphosphate, dry and crumbling, 9 parts; nitrate of potash, finely powdered, 6 parts; nitrate of soda, crushed fine, 7 parts; and sulphate of lime, well grown, 7 parts; mix and apply at once at the rate of 4 ozs. per square yard from the stems outwards to about a foot beyond the spread of the branches. In the spring, when the buds commence growing, repeat the application, and probably next year, or the year following at most, you may be rewarded with a good crop of fruit.

The Prophet Flower (L. P. C.).—The Arnebias are usually known as Prophet Flowers, though there is no apparent significance in the term. They are not very widely grown at present, but will become more



FIG. 152.—ARNEBIA CORNUTA.

popular. Few rock plants are more attractive in early summer, the flowers being borne in great profusion. Some of the flowers have dark spots and others without them, or with lighter marks; it is a peculiarity of the Arnebia that the spots with which the flowers are distinctly marked when they first open gradually fade with age, and finally disappear before the flowers wither. The latter are pale yellow in hue, and a vigorous plant in a sheltered nook on the rockwork is very bright and pleasing. Arnebia echinoides succeeds better in a somewhat shaded and sheltered position in the rock garden than when occupying an exposed site. Ordinary soil will do if well drained. The plant grows 15 to 18 inches high. A. cornuta (fig. 152) is of more recent introduction than A. echinoides, but the colour, yellow with a rich velvety brown patch, is similar to that of the latter.

White Dutch Currants on Ribes aureum Dying at the Union.—(R. W. G.).—There is no trace of fungus as you suspect, though the bark of both scion and stock is destroyed round the stem at their junction, and this is the cause of the death of the White Currant, the stock, or Ribes aureum, being quite sound immediately below in both wood and bark. The disease resembles that occasioned by bacteria, and known in the United States as "fire blight." The bacteria, named *Micrococcus amylovorus*, probably gained access by the wound made in working the Currant on the stock, a cavity being formed holding water and thus providing the needful moisture. We do not consider Ribes aureum too strong a stock for White Dutch Currant grown as a standard; indeed, we have seen some fine plants on that stock.

Cucumbers not Swelling (L. G.).—When the leaves of Cucumbers or other plants are burned or otherwise seriously injured, the roots are seriously affected in proportion to the extent of the injury. They cannot imbibe food as before, and if they could it would be crude and non-nutritious in the absence of leaves to purify it and fit it for promoting healthy growth. If you water plants with few leaves exactly as you do others with many, either the healthy do not have enough or the injured too much. The supply must be in accordance with growth. When the plants produce stout healthy leaves like the others, as they may do under careful treatment, the fruits will no doubt swell; but if the plants are much injured, and do not make new growth freely, it will be advisable to train shoots from the others for gradually occupying the space which otherwise might not be usefully turned to account. We have seen a Cucumber plant cover a roof 20 feet by 15 feet, and bear abundantly throughout; but, as you may imagine, the roots were well fed with frequent surface dressings of rich turfy loam and plentiful supplies of water alternating with liquid manure.

Iris Leaves and Roots Diseased (T. M.).—The leaves and crowns of the rhizomes are infested by a fungus closely allied if not identical with *Botrytis galanthina*. The disease is said to be induced by the plants or clumps being grown too closely, and through having the plants on the same ground for a number of years. The disease attacks the leaves and passes down to the crowns, destroying these at the junction with the rhizomes, and in consequence the growths are destroyed, even the rhizomes or root-stocks decaying. The best preventive of the disease is to give the plants a change of ground occasionally, and not to use the feeding material in a raw but a well decomposed state. It has also been found advisable to use occasionally, especially in the early spring, a top-dressing of fertiliser, such as the following: superphosphate of lime twelve parts, nitrate of potash seven parts, nitrate of soda nine parts, sulphate of lime nine parts, mixed; apply $\frac{1}{4}$ lb. of the mixture per square yard in the spring, sprinkling on to as well as about the plants, but first lightly covering the rhizomes with some thoroughly decayed rich material. It should be applied by or before the plants commence growing. As regards cure, we suggest the removal of all the diseased parts, cutting cleanly and burning them. Afterwards dust the plants by means of a bellows apparatus with a fungicide in powder containing sulphate of copper.

"Insects" from Vine Border (H. N.).—The specimens you have submitted are fine ones of snake millipedes, *Julus terrestris*, one of the British species, as to whose harmful propensities there can be no doubt. It is a general feeder, consuming both decaying and living substances. It usually attacks plants at the roots, eating the tender rootlets, and in particular it feeds upon root crops—Potatoes and Carrots. It also feeds upon the fleshy rootlets and even crown stems of Strawberries, being particularly fond of the fruit. On a Vine border it chiefly does harm by the larvæ feeding on the young, tender, spongy roots, the adults also being equally partial to them. No doubt the pest has been encouraged by the decaying vegetable matter and manure, and the removal of these may be an advantage in getting rid of the pest. But we should have tried the effect of soot, which is known to either kill or drive the millipedes away, a peck being the proper quantity to apply per rod. Nitrate of soda finely crushed has also been used with good results, an ounce being applied per square yard. The soot is sometimes applied in liquid form, two handfuls of soot being used to a gallon of water; also the nitrate of soda dissolved, 1 oz. to a gallon of water. The paraffin oil, one to fifteen parts water, will no doubt have given them a dose they are not likely to recover from, but it is not a good application for the roots of Vines. The millipedes are very fond of cotton cake, hence this has been used to attract them to the surface of the soil, and then the border may be watered with a solution of Little's soluble phenyle, a wineglassful to three gallons of water, giving about as much as watering a seed bed.

Names of Plants (T. A. J.).—1, *Centaurea cyanus*; 2, *Veronica rupestris*; 3, *Weigela rosea*; 4, *Geum coccineum flore-pleno*; 5, *Iberis sempervirens*; 6, *Viburnum opulus*. (F. K.).—*Hieracium giganteum*. (M. W. P.).—1, a form of *Cattleya Mendeli* that is well worthy of preservation; 2, *Miltonia vexillaria*; 3, *Epidendrum vitellinum*; 4, *Cochlioda Noezliana*. (M. G. R.).—1, *Salvia argentea*; 2, *Cypripedium Lawrenceanum*; 3, *Asplenium viviparum*; 4, *A. biforme*; 5, *Microlepia hirta cristata*; 6, *Adiantum cuneatum grandiceps*. (F. C. B.).—1, *Maxillaria tenuifolia*; 2, apparently a bad form of *Odontoglossum gloriosum*; 3, *Oncidium sphacelatum*; 4, *Masdevallia Pescatorei*; 5, *Jasminum gracillimum*.

Covent Garden Market.—June 27th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, Tasmanian...	8	0 to 18	0	Grapes, black ...	1 0 to 3 0
Apricots, box ...	0	8	1 3	Lemons, case ...	10 0 30 0
Cherries, box ...	0	9	1 3	Melons, house, each ...	1 0 2 0
" $\frac{1}{2}$ bushel ...	5	0	10 0	Oranges, case ...	10 0 25 0
" $\frac{1}{4}$ bushel ...	3	0	6 0	Pines, St. Michael's, each ...	1 0 6 0
" Dutch Duke, $\frac{1}{2}$ bushel ...	4	6	5 6	Strawberries, bskt 4 to 6 lb. ...	1 3 2 0
Currants, Black, per lb. ...	0	0	0 3	" peck ...	4 6 6 0
Gooseberries, $\frac{1}{2}$ bushel ...	1	3	1 9	" home grown, doz. ...	8 0 12 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	1	6 to 2	0	Mushrooms, lb. ...	0 6 to 0 8
Asparagus, green, bundle ...	0	9	3 0	Mustard and Cress, punnet ...	0 2 0 0
Beans, Long Pods ...	2	0	3 0	Onions, bag, about 1 cwt. ...	5 6 6 6
" Jersey, lb. ...	0	6	0 9	" Egyptian, cwt. ...	6 0 0 0
Beet, Red, doz. ...	0	6	1 6	Parsley, doz. bunches ...	2 0 4 0
Cabbages, tally ...	5	0	7 6	Peas, Jersey, lb. ...	0 9 1 0
Carrots, new, bunch ...	0	3	0 6	" English, per bushel ...	3 0 5 0
Cauliflowers, spring, per dozen ...	1	3	4 0	Potatoes, cwt. ...	5 0 10 0
Celery, bundle ...	1	0	1 9	" new Jersey, cwt. ...	10 0 12 0
Cucumbers, doz. ...	2	0	4 0	" Teneriffe, cwt. ...	12 0 14 0
Endive, doz. ...	1	6	2 0	Radishes, long, doz. ...	0 6 0 0
Herbs, bunch ...	0	2	0 0	" round, doz. ...	1 0 0 0
Leeks, bunch ...	0	8	0 0	Shallots, lb. ...	0 4 0 0
Lettuce, doz. ...	0	6	0 0	Spinach, bushel ...	2 0 3 0
" Cos, score, from ...	0	6	2 0	Tomatoes, English, doz. lb. ...	3 0 5 0
Mint, green, doz. bunches ...	2	0	0 0	Turnips, new ...	0 4 0 8
				Vegetable Marrows, doz. ...	4 0 6 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums ...	2	0 to 3	0	Narcissus, double white, doz. bunches ...	4 0 to 8 0
Asparagus, Fern, bunch ...	2	0	2 6	Odontoglossums ...	3 0 7 6
Carnations, 12 blooms ...	1	6	2 6	Pelargoniums, doz. bnchs ...	4 0 6 0
Cattleyas, per doz. ...	12	0	18 0	Pæonies ...	12 0 24 0
Eucharis, doz. ...	4	0	8 0	Roses (indoor), doz. ...	3 0 4 0
Gardenias, doz. ...	2	0	3 0	" Red, doz. ...	2 0 4 0
Geranium, scarlet, doz. bnchs. ...	6	0	9 0	" Safrano, doz. ...	1 6 2 6
Lilium lancifolium album ...	3	0	4 0	" Tea, white, doz. ...	2 0 3 0
" rubrum ...	3	0	4 0	" Yellow, doz. (Perles) ...	3 0 6 0
Lily of the Valley, 12 bun. ...	8	0	18 0	" Maréchal Niel, doz. ...	6 0 12 0
Maidenhair Fern, dozen bunches ...	4	0	6 0	" English (indoor):—	
Marguerites, doz. bnchs. ...	2	0	4 0	" La France, doz. ...	4 0 6 0
" Yellow doz. bnchs. ...	2	0	4 0	" Mermets, doz. ...	3 0 8 0
Mignonette, doz. bunches ...	2	0	4 0	Smilax, bunch ...	4 0 6 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, per doz. ...	12	0 to 24	0	Foliage plants, var., each ...	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36 0	Genistas, per doz. ...	8 0 15 0
Aspidistra, doz. ...	18	0	36 0	Geraniums, scarlet, doz. ...	6 0 10 0
Aspidistra, specimen ...	15	0	20 0	" pink, doz. ...	8 0 10 0
Azaleas, various, each ...	2	6	5 0	Hydrangeas, white, each ...	2 6 5 0
Boronias, doz. ...	20	0	24 0	" pink, doz. ...	12 0 15 0
Crotons, doz. ...	18	0	30 0	Lily of Valley, per pot ...	1 0 2 0
Dracæna, var., doz. ...	12	0	30 0	Lycopodiums, doz. ...	3 0 6 0
Dracæna viridis, doz. ...	9	0	18 0	Marguerite Daisy, doz. ...	8 0 10 0
Erica various, doz. ...	8	0	18 0	Mignonette, doz. ...	8 0 12 0
Euonymus, var., doz. ...	6	0	18 0	Myrtles, doz. ...	6 0 9 0
Evergreens, var., doz. ...	4	0	18 0	Palms, in var., each ...	1 0 15 0
Ferns, var., doz. ...	4	0	18 0	" specimens ...	21 0 63 0
" small, 100 ...	4	0	8 0	Spiræas, per doz. ...	8 0 12 0
Ficus elastica, each ...	1	6 to 7	6		



Implements at the Royal Show.

MACHINERY already plays such an important rôle in the work of every well managed farm, and every year makes the farmer so much more dependent upon it, that the implement department of the great national show is constantly becoming of greater public interest.

We are glad to find that the amount of shedding occupied shows a large increase on last year, and is much above the average, as are also the number of exhibitors and exhibits. This shows that notwithstanding low prices of farm produce the trade for farm implements

is encouraging enough to induce manufacturers to extend their production.

A day intelligently spent amongst the machinery at a big show is always a day well used, and one by which the farmer may obtain much useful knowledge, even if he buys nothing, whereas if he be inclined to criticise as well as inquire, the engineer or machine maker may pick up many a hint in return from his practical knowledge. There are £200 offered in prizes for machinery, and the exhibits are thus classified:—

Horse power cultivators	...	...	...	...	18
Steam diggers	...	...	...	...	2
Milking machines	...	...	...	...	2
Sheep shearing machines	...	...	...	...	11
New implements for medal	...	...	...	...	50

Amongst the novel implements is an entirely new invention, just brought out by Messrs. Ashley & Sons of Louth. It is a mill for grinding corn, crushing maize, and splitting beans. The grain is first dealt with by a combination of grinding discs, which bring it to a three parts ground condition; it then passes through the stones and is reduced to meal. A great saving of power is claimed for this process.

Messrs. Sargeant & Co. of Northampton sent a novelty in the shape of a drill named the "Victor." The object of this tool is the simultaneous sowing of grain and artificial manure, whilst not allowing the two to come into immediate contact. This end is obtained by having two sets of coulters; the first row open a number of small furrows and deposit the manure therein, the other set following behind and passing between these furrows fill them up, covering the manure and leaving the grain between them and not in contact with the fertiliser. The advantage in this drill is in completing two sowings at one operation. We should prefer manure to be broadcasted and harrowed in, either before or after the grain drilling, as we are sure manures cannot be too much distributed.

A new implement of great ingenuity and which is attracting attention is a patent automatic electrical horse feeder, and was exhibited by Messrs. Thomas Wood, Miles & Co. of Bristol. The apparatus is so constructed that it can be worked by an alarm clock or by pressing an electric button. One or any number of horses may be fed at a given moment, the feed having been prepared and put into one or more overhead feeding boxes; when the appointed hour arrives or the button is pressed the boxes are reversed and each deposits its contents in the manger. Much difference of opinion was expressed as to the utility and value of this invention, but we venture to think that it will obtain a favourable verdict in the long run, for now that horsemen are so difficult to obtain and still more difficult to get out of bed at a time when horses should have their morning feed, any apparatus which will make these animals independent of the sleepiness or otherwise of the farm servant will be a benefit to them, and through them to their owners. Apart from farm horses, it should commend itself to public companies and all owners of horses who expect their animals to be at work at an early hour. This apparatus was only exhibited for the first time three weeks ago at Bath.

Another new machine that deserves notice and which attracted a good deal at the show, is the new patent swath turner, exhibited by Messrs. Blackstone & Co. of Stamford. This machine with its two forks turns two swathes; one is turned clear of the road wheel, and the other on to the track over which the horse has passed—i.e., the space between the swathes before being turned. Each swath is turned on to dry ground previously unoccupied. The Clover or hay is left in a wonderfully light condition for drying, and as one machine will take the place of a large number of men, the money saving must be considerable, besides which there is the greater expedition with which the crop may be harvested, thus minimising the risk of damage from rain.

Anything which tends to remove elements of danger is to be commended, and when we think of the many accidents with chaff cutters which have come under our own observation, we cannot but express our pleasure that no less than three new cutters, built with special view to the safety of the man feeding, have been shown at York, the exhibitors being Messrs. Richmond & Chandler, Messrs. Bamford and Sons, and Messrs. Kelsey & Son of Sheffield.

Messrs. Bamford's cutter practically feeds itself, the material to be cut being simply thrown into a wooden trough, and it is not necessary for the man to put his hands in at all. There is also an automatic apparatus, which throws the cutter out of gear if it is strained by overfeeding. When noted ploughmakers like Messrs. Howard of Bedford, and Messrs. Cooke of Lincoln both take up a new idea there should be something in it. These firms are exhibiting, as novelties, ploughs to ridge three rows at once; Messrs. Cooke's is also described as an earthing plough. As regards the ridging, one thing gained by such an implement should be greater equality in the width of the ridges, and if it be found to save horse or manual labour as well it should come into general use. We should be more doubtful as to its utility for earthing up purposes.

We have always had a good feeling for Messrs. Lankester since we bought that very satisfactory little Iron Age hoe from them, and we trust that they are not promising too much with their new hay loader. This loader is attached to a farm waggon, and will take up the hay from a windrow, but not out of cock. It is supposed to be able to load a ton of loose hay in five minutes, and do it more cleanly than hand labour. A public trial of such a machine would be very interesting and we should like to see one.

A difficulty in connection with spraying machines worked by horse power has been the liability of the air vessel to burst owing to a too sudden increase of speed on the part of the horse. Mr. G. F. Strawson has invented a new automatic safety gear which prevents this and regulates the pressure up to which it is desired that the machine shall work.

The prizes for horse power cultivators were awarded, first to Messrs. Harrison of Stamford, second to Messrs. Coleman & Morton of Chelmsford. For steam diggers, first prize The Cooper Steam Digger Co., Kings Lynn. For milking machines no prize was given, the machines being considered open to much further improvement, and the judges suggested renewed competition at some future time. In the two classes for sheep shearing machines there were eleven entries, and the prizes for both mechanical power and hand driven machines went to the same parties, the Barton Gillette Co. Messrs. Kelsey received a silver medal for their new safety apparatus in connection with their chaff cutter, and another was awarded to the Milwaukee harvester and binder.

Work on the Home Farm.

The Royal Show week, as usual, brought with it showery weather, and would-be haymakers are anxiously waiting for a rising barometer before venturing to set the grass mower to work. The crops have improved a little with the heavy showers, but Clovers have always been too thin on the ground to make good crops of hay, and it is impossible to improve them now. Hay is just a fair crop, and will be of good quality if well got. It has plenty of bottom grass, but is short. We do not think it is advisable to wait for fine weather before cutting; farmers have to take risks bigger than this, and we have noticed that if we cut in showery weather we very often had fine weather to follow. Then there is the second crop to consider, for the earlier the first crop is harvested the more valuable will the second be for the lambs during the critical month of August.

All crops show great improvement, Barley especially, as it delights in warm showers about midsummer. Turnips, which a week or two ago were suffering in a few cases from fly, are now growing rapidly, and will get on quite as fast as the majority of farmers will want them, for farm hands are as scarce as ever. A few old Wheat stacks are still to be seen. As prices have varied very little during the last six months, holding Wheat must have been an expensive game to play. There should be no reason for delaying thrashing any longer if the necessary hands can be got, unless the Chinese trouble should lead to a European war. We fear that the stacks will not be worth much if they are kept until such an event takes place.

We see that the Meteorological Office is offering to supply daily telegraphic forecasts of the weather to persons desirous of having them during the harvest season. The charge will be 6d. per diem, and an equivalent charge for portage where necessary. Applications for the forecasts, stating the period for which they should be supplied and particulars as to the shortest telegraphic address and portage, should be sent to the secretary, Meteorological Office, 63, Victoria Street, London, S.W. Surely one farmer at least in every parish ought to avail himself of this cheap information. We have found an evening paper with the day's cricket in it very useful in attempting to forecast the next day's weather; but the information at the command of the weather office is of a far wider nature than that, and covers thousands of miles; and the farmer should have the forecast in his hands before his men leave work for the day.

